The Builder.

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The Institute and the London Building Act.—II.

IN section 54, as to recesses and openings in walls, the Institute Committee suggest striking out the words in the last paragraph "with respect to the area of recesses and openings," the effect of which is to leave the district surveyor power to make any modification in the requirements of the section in special cases. It does not make much difference in the effect of the section. They do not suggest any improvement in the wording of clause *b*, which is, as we have before pointed out, ambiguous and open to two interpretations. Nor do they suggest a correction of the anomaly that in this section a recess is not to come "within 13½ in." of the external walls; while in section 60, on chases in walls, a sentence with precisely the same intention reads "13 in." It is certainly odd that such obvious discrepancies should have escaped all notice from a revising committee.

In the important section 56, "Rules as to Bressummers," the Committee propose to delete, why, we know not, clause 2, providing for room on the bearing pier for the expansion of a metal bressummer. Is expansion of metal beams to be forbidden under the revised Act? Then they add at the end of clause 1:—

"Provided that any bressummer of metal may be supported solely on a sufficient metal stanchion embedded in the party or external wall so that such stanchion shall not be nearer to the centre of a party wall than 4 in. and in such case no pier in addition to the party wall shall be required."

This is certainly not in the direction of sound construction, as it deprives the wall of the strengthening from a projecting pier. It is obviously inserted merely to render it easier to provide large openings in the wall. The iron standard may be admitted to provide adequately for the vertical weight on the bressummer, but it does not strengthen the wall in the same way as a pier; nay, more, the allowance for the expansion of a metal bressummer having been deleted, it provides, under circumstances of expansion, a lever for throwing the wall out of perpendicular. Clause 4 is proposed to be deleted, and another one substituted, for no sufficient reason, as all the alteration that is really proposed is to add "vitrified stone-ware" to the allowable materials for a template or corbel. The really serious defect in the section, which specifies a bearing of 4 in. on the wall for any bressummer, independent of its length, is passed over without notice. Yet it is almost a truism in structural theory that the bearing on the wall should have a proportionate relation to the length of the beam. A bearing sufficient for a beam of 10 ft. span is not sufficient for one of double the span—an elementary principle entirely neglected in the section, and apparently equally neglected by the Committee.

In section 59, "Height of Party Walls Above Roof," an addition is proposed, providing that in a building other than of the warehouse class, and "where the roof is wholly constructed of fire-resisting materials," the party wall shall be carried up a thickness of 8½ in. "to the underside of such roof surface," instead of 15 in. above it. There has been much objection raised by some architects to the appearance of the wall carried above the roof, and in the case supposed, where the roof is entirely of fire-resisting materials, the proposed provision may be sufficient.

In section 61 (4) the suggested substitution of 85 degrees with the horizon for 75 would make the roof practically almost a continuation of the wall line, and in view of light and air to streets is very objectionable. It runs in the same direction as so many others of the suggested alterations, to enable a building-owner to make the utmost out of his own property independent of considerations of the general good or of the best structural conditions.

Some minor alterations are suggested in section 64, which present nothing for criticism, but the Committee have not thought of inserting the provision that a chimney-bar should be "straight"; a curved chimney-bar, if any real strain came upon it, is not a tie at all, and would merely give. But in London, "whatever is, is right"; it is the custom to make chimney-bars curved to the line of the arch, and builders would be astonished if you told them it was unscientific. In some parts of the country, at all events, they know better. We can see no sense in limiting the projection of the hearth-stone to 12 instead of 18 in.; it is, in fact, too little for safety, in a wood-floored building. In clause 18, providing that a flue shall not be built against a party structure "unless surrounded with new brickwork at least 4 in. in thickness," the Committee propose to strike out "new." It was a very

wholesome provision, for it ensured that the party wall side of the flue should be reset instead of being left to the chances of old brickwork. The alteration is surely (again) in the direction of cheapening building operations; unless, indeed, the Committee did not realise why "new" was inserted. The inaccurate 4 in. is passed over without comment; but a properly edited Building Act should really make up its mind what size it considers a brick to be, instead of ringing the changes between "13 in." and "13½ in." and "4" or "4½" in.

In section 66, "as to fires and pipes for conveying vapour, etc.," it is proposed in clause 4, "a pipe conveying heated air or steam shall not be fixed," etc., to insert after "heated air" the words, "other than air heated by hot water at low pressure"; thus giving greater facility for conveying warmed air from coils. In section 67 an omission is supplied by the insertion of the words "or roof," the present section mentioning "a floor over" only, which might give opening for evasion of the true object of the section.

It is proposed to reduce the height of "habitable rooms" (section 70) to 8 ft., instead of the present 8 ft. 6 in.—an undesirable change; 8 ft. 6 in. is quite low enough. In clause *d* "every room next the ground" is substituted for "every basement room," an improvement in definition. The other alteration, that any staircase to rooms over a stable shall be separated from any stable which it may adjoin by a brick wall "not less than 4½ in. in thickness," instead of the present "not less than 9 in.," we entirely disapprove.

In section 73 "fire-resisting" is rightly substituted for "fireproof," and the Committee have made one step towards a recognition of the architectural importance of bold cornices by proposing, after the limitation of the cornice to 2 ft. 6 in., the addition of the words "except in streets 60 ft. wide and over where cornices may be projected not more than 3 ft. 6 in. over the public way." Even to this there ought to be added a discretionary power for special cases. The Committee seem to have been entirely blind to the absurdity of clause 3, by which a shop-front cornice may project for 18 in. "over the ground of the owner of the building," but no part of the shop-front other than the cornice "shall project over the public way." Is it to project "over the public way" or "over the ground of the owner"? Or is "over" used in two different senses in the same sentence? Moreover, any shop-front may "project" 10 in., but no part of the shop-front except the cornice may project over the public way. Then what does it "project" over or what does it "project" from? If it projects from the front of the building line it *must* project over the public way; and if it is within the building line the permission is unnecessary. This is one of the most absurd and ill-worded clauses in the whole Act, and the Committee pass it over without a remark. Equally absurd is clause 4, which provides that no part of the woodwork of a shop-front shall be placed nearer than 4 in. to the centre of a party wall or the face of an adjoining wall, unless there is a pier or corbel of uncombustible material, 4 in. wide, between it and such centre or face of the wall. That is to say, the woodwork cannot come nearer than 4 in. unless there is corbel 4 in. thick between it and the guarded point; then how *can* it come any nearer than 4 in.? But this absurdity escapes the Revising Committee entirely! They seem to be equally blind to the confusion of wording or of meaning in clause 5, which we pointed out when the Act was first published. In a street at least 40 ft. wide, or to a building the front wall of which is at least 40 ft. from the opposite boundary of the street, the owner may add a bay window projecting 3 ft. "on his own ground." If he has 3 ft. to build on, and his front wall is 40 ft. from the opposite boundary of the street, then the street is only 37 ft. wide, and the whole conditions fall to the ground. To make this still clearer (or shall we say still more confused?) it is enacted that the front of the bay window shall not come within "the prescribed distance" from the centre of the street. The prescribed distance is 20 ft., so that in a 40-ft. street it must come within the prescribed distance in any case. It seems incredible that such a clause should have been drafted, but that its absurdity should be passed over by a Committee engaged in improving the Act seems still more extraordinary. The only alteration they suggest in this sub-section 5 is to omit clause *a* entirely. This limits the bay to three stories high, and is, no doubt, unnecessary, for the bay cannot be higher than the front, and there is no reason why it should not be as high. But the section is absolutely unworkable by its own wording, and the Committee seem to have been quite unconscious of this.

In sub-section 6, concerned with oriel windows or turrets, the word "balconies" is rightly inserted, and it is proposed to alter clause *a* so as to read that the limitation of the projection of such features shall be exclusive of "mouldings or other architectural features." Mouldings is quite right, for we know about what their projection is likely to be, but "architectural features" we should imagine would be found rather vague by the authorities, though we see no objection to its intention. From clause *e* it is proposed to delete the words after "district surveyor," which permit of an appeal to the superintending architect. This we think is only reasonable, especially if the district surveyors are again to be practising architects; the surveyor ought to have power to settle such a matter. In respect to this part of the section, a definition of oriel windows is added:—

> "An oriel window is any projecting window corbelled out from an external wall, or the masonry of which does not extend downwards to the level of the ground."

This might be improved; the word "or" is superfluous, and if it was intended to provide for some other way of projection than "corbelling" properly so called, it should have read "corbelled out or projecting from." "Down," in this connexion, would be better English than "downwards."

Section 74 the Committee propose to delete and to substitute a much more precise and extended one, including eleven separate clauses. This is one of their best contributions to the subject, and is a decided improvement on the existing section. It is too long for us to quote here in full. The principal new elements are these. Instead of the present clause 3, enacting fire-resisting construction for buildings more than twenty-five squares in area containing separate sets of offices, etc., the new clause (2) provides that all such buildings exceeding 40 ft. in height, and ten squares in area, shall have the tenements separated horizontally by floors or arches of fire-resisting materials; the remainder of the clause repeats the present clause 3. The suggested clause 4 provides that no building containing separate tenements shall, without consent in writing of the Council, extend to more than fifty squares in area unless floors, principal stairs, and supporting walls are of incombustible materials. Clause 5 repeats the main provisions of the existing clause 2, with the addition of the proviso that partitions and floors are to be of fire-resisting materials "other than wood" (the reason for this appears later), and that stairs are to be of fire-resisting materials, and passages and approaches enclosed with fire-resisting materials other than wood. The only mistake here is applying "other than wood" to the stairs, since the fact is that there is no kind of stair more fire-resisting than thick solid oak steps, or safer for use after being exposed to heat. Another clause provides that staircases and passages of approach be at least 3 ft. wide. Between the termination on the ground floor of the stair of access and the street there is to be a passage enclosed and constructed as fire-resisting, unless means of escape are provided to the satisfaction of the Council from the side, rear, or roof of the building. Another clause provides that, "except for the purpose of a party-structure separating buildings," nothing in this section shall prevent the use of solid wooden joists placed close together, or wooden joists in connexion with fire-resisting pugging 5 in. thick, for fire-resisting floors. The intention is obvious, but there is a confusion of terms in referring to a "party structure separating buildings"; it should be "separating tenements"; the whole is the "building"; the object is that separate tenements should be divided by a floor "other than wood." The first clause, we observe, repeats the unnecessary verbiage of the present first clause—"from the adjoining building (if any) or from each of the adjoining buildings (if more than one)." "From the adjoining building or buildings (if any)" would have covered the whole conditions more neatly. But in the main this is a very good section, and we wish all the Committee's suggestions had been equally satisfactory.

In section 76 it is proposed to delete clause 1, which prescribes party walls, in a warehouse building allowed to exceed the usual dimensions, limiting each division to 450,000 cubic ft. This is perhaps right, for where in a very large building unbroken floor space is required, the division by party walls might neutralise the whole value of the extended size; and it is to be presumed that such a building would only be allowed subject

to the most stringent conditions as to fire-resisting construction.

The Committee delete section 77 and substitute a new one, for no very obvious reason, as the new one does not differ much from the existing one, except by the addition of a clause which provides for buildings being united in whole or in part if the portions in separate occupations are separated by a floor 8 in. thick. At the commencement of this new section, however, like the Irishman's wife who told him of her debts, "Their mind is wandering again," and this is how the section commences :—

> "Buildings shall not be united except under the following conditions :—
>
> "(1) If when so united and considered as one building only they would not be in conformity with this Act."

We presume they meant to say exactly the opposite; but that is how it stands.

In section 78, "Construction of Public Buildings," it is proposed to interpolate the following passage into the first sentence: after the words "or in the event of disagreement may be determined by the Tribunal of Appeal," to place a full stop, and to read on :—

> "For the purposes of this section the district surveyor or in the event of disagreement the tribunal of appeal may in his or their discretion vary or depart from any of the enactments in this Act as to the construction of buildings that may appear to him or them necessary or desirable to suit the special circumstances of the case of any public building or any one or more of a series of public buildings or their accessories or connexions within one curtilage and save so far, etc., etc."

The remainder of the sentence standing as at present. After this sentence the word "but" ought to have been substituted for "and," to make it read logically: "but save so far," etc.

In section 80 it is suggested (and we agree) that the prescribed width of staircases ought to apply also to doors, taking the full width of opening clear of the thickness of the opened doors.

In section 90, on "rights of adjoining owners," it is proposed to substitute in line 7, for "any party fence wall," "any external or party fence wall," which is requisite to cover cases where the adjoining owner's wall may not be legally a party wall. In clause 4 it is suggested that twelve months instead of six months should be the time for the expiration of a party wall notice; in this also we agree.

In section 91 (10) it is suggested that instead of "a Secretary of State" it should be "the President for the time being of the Royal Institute of British Architects" who should select a third surveyor; which is in every respect more suitable.

In section 93 (1) it is suggested that the two months' notice of a building owner to the adjoining owner in regard to works which may affect the latter, should be reduced to "one month," and in this we concur; a month is quite sufficient for all reasonable requirements. In clause 3 it is proposed to strike out "inconvenience" as a reason for compensation, in which also we agree; "inconvenience" is a very vague term, of which almost anything may be made; and hardly any new buildings can be carried on without a certain degree of inconvenience to some one. In section 95 (*d* 4) the Committee seem to have hit on a mistake in wording in the present Act. In the sentence "if any footing, chimney breast, jambs, or floor be cut away," they suggest for "floor" read "flue," and probably this was really what was intended. On the other hand, the proposal to strike out the words "as aforesaid" in the second paragraph of 95 (*f*) seems quite illogical. The reason given is that by those words, referring to a previous clause in the section, "only buildings erected after 1894 are affected." But that is probably what was intended; it was not to be retrospective legislation.

In section 96 it is proposed that "six months" should be substituted for "one month" as the period within which the building owner is to furnish the adjoining owner with an account of the expense which is to be borne by him. It is rather a large alteration; but one month was certainly too short, considering how much unavoidable delay there often is making up building accounts.

After this the report skips to Part XII. of the Act: "Sky signs," of which it is remarked that it "requires revision to bring it up to date," but on what ground is not stated, nor do we see any. In Part XIV., section 164, it is suggested (and with good reason) that the advertisement of intention to apply for authority to make new by-laws should be required to be published in the *Times* "and at least four other London daily or weekly papers," as well as the present requirement of the *London Gazette*, which constitutes rather an official than a real publication. And we concur also in the suggestion that section 198—"Proceedings with respect to a building shall not be affected by removal or falling in of the roof or covering of such building"—should be "more explicit." As it is, it is rather difficult to understand why it was inserted or what its precise intent is.

In regard to the second schedule ("Fire-resisting materials"), it is rightly suggested that as a number of new fire-resisting materials are now available, the list ought to be extended. On the other hand, we may ask, ought granite and some other stones to be still regarded as "fire-resisting materials"? They are incombustible, no doubt; but, as observed in our last article, "incombustible" is a perfectly different thing from "fire-resisting"; and the faculty of stone for splitting under heat, and its dangerous quality in that sense, are so well known now that it seems almost unsuitable that it should still be scheduled under fire-resisting materials.

Two entirely new appendixes are suggested to the Act: one in regard to the pier construction of buildings, the other in regard to the regulation of "skeleton buildings"—*i.e.*, the American type of steel-framed structures, which we hope may not be adopted here to any extent; but as it is a form of structure that is attracting attention, it would be well to have it prepared for in the Building Act. This appendix has been very carefully made, and seems calculated to ensure sound construction in this type of building. The appendix relating to piers is a praiseworthy and, on the whole, successful endeavour to reduce to rules, to meet all cases, the required thickness and width of piers in walls. For the width the general rule given is that the collective width of the piers on any wall shall be at least one-fourth of the collective length of the piers and wall taken together—*i.e.*, in a wall 80 ft. long there may be four piers each 5 ft. wide, or eight piers each 2·6 ft. wide, which is a fairly liberal allowance. The provision that "any pier may be discontinued for any portion of its height," provided that the remaining piers are proportionately strengthened, is too vague in its wording, as anyone will perceive who tries to define what could be done under that wording. "Any pier" might be twisted into meaning every one. The permission, however, is subject to the "satisfaction of the district surveyor," as well as the bressummer to be employed to bridge the gap.

There are, it will be seen, some useful suggestions in the Report of the Committee of the Institute; but with the exception of these two last-named appendixes, they are mostly on small points, and they show a general tendency not so much to make building better as to make it cheaper and more convenient. Many weaknesses of drafting are passed over without notice, the Committee having apparently no eye for such points. But the most serious defect is the total want of large views as to the architectural requirements of building in a capital city, and the failure to take the opportunity to suggest any such. The circle of ideas included under the term "Professional Practice" is not one that tends to enlarge men's views on architectural subjects, and the Committee of the Institute made a mistake in delegating the task to the Practice Standing Committee. They should have appointed a small special Committee of, say, four eminent architects and two eminent surveyors to consider the Improvement of the Building Act, and they might then have had a Report and suggestions more worthy of the Institute and of the occasion.

NOTES.

Commission on London Traffic. The Royal Commission on London Traffic have taken a wise course in appointing technical experts to advise them upon various important questions connected with locomotion and transport in the Metropolis. Three eminent engineers have been nominated by the Commission—Sir John Wolfe Barry, one of the Royal Commissioners, Sir Benjamin Baker, and Mr. W. Barclay Parsons, a well-known American engineer associated with the Rapid Transit Commission of New York. It would probably be difficult to name any three men better qualified for the task now to be taken up. Sir J. Wolfe Barry has already taken considerable interest in the traffic problem, and his statesmanlike methods are sufficiently familiar to our readers; Sir Benjamin Baker is probably the best living authority on constructive engineering work, and is gifted with an unusual capacity for dealing with practical problems; while Mr. Parsons will bring to the aid of the Commission the proverbial keenness of the American engineer and an intimate acquaintance with methods of dealing with difficult traffic problems in the

United States. The Committee have taken much evidence relative to proposals for the improvement of traffic conditions in the Metropolis, and the duty of the experts appointed will be to report upon the engineering and other features involved in such schemes. The appointments now made should have the effect of hastening the completion of the report to be made by the Commission—a consummation much to be desired, as at present all legislation dealing with traffic facilities in London is practically in abeyance.

The Responsibility of Street Authorities.

THE recent decision of the House of Lords, relative to the liability of local authorities to safeguard the interests of the public so far as concerns the conditions of the streets under their control, is certainly to be commended. The facts of the case in point have already been reported in full detail by the daily papers. Nearly four years ago a heap of earth was deposited on the carriageway of a street in Shoreditch during some sewer construction. As this obstacle was left without a light, it happened that in the evening a hansom cab was overturned, injuring the occupant and driver. The injured occupant then raised the contention that the corporation were liable for the consequences of their oversight. After protracted litigation the Lord Chancellor has finally decided that the local corporation were responsible. As not infrequently happens, the various courts by whom this case was successively considered arrived at totally different conclusions, and it is a matter for congratulation that the final decision of the House of Lords is fully in accordance with the dictates of commonsense. To the lay mind the matter appears to be perfectly simple, for it has been admitted throughout that the corporation neglected to take the very simple precaution of placing lights upon the offending mound of earth, and it is a very elementary axiom that people who cause injury to others by neglect, or in any other way, should be held responsible for the consequences.

Parliamentary Committees.

THE evidence of Mr. Gray, the counsel to the Chairman of Committees of the House of Lords, given before the Royal Commission on London Traffic again draws attention to a point which was also brought forward in the Blue Book issued by the Select Committee of the House of Commons, upon which we commented in our issue for January 17 last year, viz., the lack of any continuity in the policy of committees in their consideration of opposed Bills. So far, we believe, no steps have been taken to carry out the recommendations of the Select Committee on this subject, but the piecemeal policy in dealing with local and private matters is disastrously illustrated in and around the Metropolis. In some cases large monopolies have been granted, as in the South-Eastern and Chatham Railway amalgamation; whereas in other instances—for example, the Underground Railway schemes—competition has been favoured where a certain amount of combination would have increased efficiency and saved expense. Mr. Gray suggests special committees for metropolitan affairs being formed as far as possible of the same members. Many practical difficulties seem involved in attaining this end; but the question should receive the early attention of Parliament, and the recommendations of the Select Committee should not merely be relegated to a pigeon-hole.

The Smoke Nuisance in London.

JUST as a number of small raindrops make a shower, so a number of small chimneys create clouds of smoke in London, and until private dwelling-houses are prevented from discharging black smoke the atmosphere of London will not be appreciably improved. Still, half a loaf is better than no bread, and the recently reported case of McNair *v.* Baker is an authority that, for the purposes of the Public Health (London) Act, 1891, sect. 24, a club-house is not a private dwelling-house, and, therefore, cannot legally send out "black smoke in such quantities as to be a nuisance." In other words, the section must be construed strictly, and a private dwelling-house only can have this privilege so detrimental to the community. A club-house is not a place of business, and for social purposes it has some of the attributes of a private dwelling-house, but in fact it is not one, and not being one, neither the St. James's nor any other club can be allowed to contaminate the atmosphere of London with black smoke.

Sprinklers for Theatre Stages.

IN a recent reference to the prevention of theatre fires in Germany, Herr Lautenschlaeger, formerly of the Prince Regent Theatre, Munich, advocates the use of a sprinkling apparatus first adopted at the Royal Court Theatre in the same city. This seems to be a useful device, as by its means a fire can be extinguished not only at any particular part of the stage, but those parts which have not been ignited can be completely drenched with water, thereby preventing further spread of the flames. In the installation of the Prince Regent Theatre, Munich, the valves connected with perforated water pipes, extending above the entire stage, are controlled by a single lever operating one, two, three, or four valves at once, so that a portion, or the whole, of the stage can be deluged with water. It is said that on one occasion during a performance, in which gun-cotton was used to produce lightning flashes, some gauze clouds were ignited. A fireman promptly pulled the lever, with the result that the scenery and stage were so thoroughly soaked with water that the flames were almost immediately extinguished. It is added that the audience suspected no danger, believing the downpour of water to be a part of the performance. The adoption and use of a device such as this would probably have prevented the recent disaster at Chicago, and the application of some equivalent safeguard ought to be compulsory at all theatres and similar places of amusement.

Photography and the Planets.

IN referring to Mr. Maunder's interesting lecture on the planet Mars at the London Institution a few weeks ago, we asked whether telescopic photography could not do something to clear up the vexed question as to the supposed "canals" on Mars. Lecturing on Mars again at the Camera Club on Saturday last Mr. Maunder, after giving the general argument advanced in his London Institution lecture, touched especially on this subject of photography, and pointed out (what we must admit we ought to have realised) that the planets were in very different conditions in regard to photography from the fixed stars. The latter have practically no motion as far as the eye or the lens are immediately concerned except the apparent motion from the revolution of the earth, and therefore an exposure of two or three hours can easily be secured with a clock-driven telescope, and fixed stars have thus been photographed which no telescope can see. But with a planet there is in the first place its own motion in its orbit to deal with; though it seems possible that a telescope might be geared (as indeed we think Mr. Maunder admitted) to follow the line of movement resulting from the combination of the orbital motion and the celestial sphere motion. But when in addition to that the planet has a tolerably rapid revolution on its axis, it is manifest that only a very short exposure could be obtained for a photograph. The difficulty is rendered still greater in the case of Mars from the peculiar colouring of the planet, in which the lighter parts, being yellowish, would come out dark, and the darker parts, showing a bluish gray, would hardly photograph. In regard to Mars we feel pretty well satisfied that the canal theory is done with now. As Captain Abney said at the meeting, Mr. Lowe's essay on the subject was so fascinating that every one who read it was disposed to believe it—for the next half hour. It certainly fascinated us; but when Mr. Lowe began to see canals on Venus, of which we cannot see the actual surface for the atmosphere, one had to give him up.

Hellenic Society.

THE meeting of the Hellenic Society on Tuesday was an unusually interesting one, but the subject of the principal paper, by Dr. Farnell, comes more under the head of ethnography than of archæology as usually understood. The paper, a very well-reasoned and logical one, was an attempt to show that there was an early incursion of Hellenes into Asia Minor somewhere about the XIVth century B.C., and that this is commemorated in the name Lycia, "Lukeia," as derivable from "Apollo Lukeios," or Apollo of the Wolf; the lecturer maintaining that a cult of Apollo in connexion with the wolf was traceable in early ages, from Argos through Rhodes to Asia Minor. Opinions were divided as to the theory, but of the interest of the paper itself there could be no question. Subsequently Mr. Arthur Smith exhibited on the screen some photographs of a terminal figure of Dionysus Propylæus—"Dionysus of the Gateway"—bearing an inscription to the effect that the original (for this was admittedly a copy) was the work of Alkamenes (450-400 B.C.). Mr. Smith considered the figure was archaistic, *i.e.*, imitation

archaic of a late date, and, therefore, rather a translation than a copy of Alkamenes' work. But though the conventional arrangement of the hair round the forehead looks archaic, there are not wanting instances of similar treatment in works of an advanced period; and the treatment of the beard, in spite of its square outline, appeared to us to be a great deal too naturalistic in detail to be called archaic. The interest of the matter lies in the fact that the figure appeared to afford a definite piece of evidence as to the work of Alkamenes. Dr. Furtwängler, indeed, claims, we believe, to have identified seventeen examples of the work of this sculptor; but we fear we are sceptical about identifications which rest only on deductions from style.

Royal Academy Lectures.

DR. MURRAY'S second lecture on Thursday, the 18th, was on the interesting subject of Athenian stelæ. The earliest reference to a Greek tomb symbol was the request of Elpenor for a memorial mound with an oar over it. Greek funeral memorials originally referred to the past life of the deceased, but these gradually gave way to speculation as to the future, as shown in an archaic Spartan relief, where a man and his wife were seated together with a serpent carved behind as the emblem of the future life. The flatness of modelling in this example was remarkable, but it was probably completed in colour. This and the figure called the "Warrior of Marathon" (VIth century) showed the rigidity of pose common to archaic work. There were few stelæ of the Pheidian age, perhaps because the Persian war had caused private to be subordinated to public interests. When funeral memorials became more common at a later date they frequently represented parting scenes, sometimes allegorised by the introduction of a well-known history, such as the parting of Hector and Andromache, or Orestes and Electra at the tomb of Agamemnon; not intended as illustrations of the original story, but as symbolical of the parting of friends; the story of Eurydice and Orpheus was used in the same manner. Another common *motif* in the later stelæ was the representation of a woman seated (generally with a maid attendant) and putting on her ornaments. The figures were often placed within a kind of framework suggesting a door with a column on each side; this was the doorway into the future life, as had been rendered clear by an example in the British Museum, where there was an inscription which might be freely translated—"This way to the Blessed." Dr. Murray showed an interesting late stele, partially defaced, of a figure of a youth, in which the drapery was treated rather as if derived from a bronze than a marble style; the general design and the sentimental type of figure seemed to indicate the influence of Lysippus. Referring to the stelæ of the Athenian burial ground which were still *in situ*, Dr. Murray observed that they showed a change in the personal type represented; the heads were smaller, and personal attraction in the figures seemed to be more aimed at, and the drapery was treated as if thinner and lighter than the broad folds of the older Greek drapery. The same style was to be seen in figures on the temple of Nike Apteros. An equestrian relief from the tomb of Dexilios was an interesting example of the manner in which such a subject was treated; Dexilios was really killed in the battle, but the stele did not represent this; it represented him successfully attacking an enemy. A curious example shown was a stele with a large amphora in relief supported by a twin sphinx; the amphora represented a bridal vase, but the symbolical meaning of it (contrary to what one might expect) was that the person commemorated was unmarried. In concluding his lecture, Dr. Murray remarked how much the feeling of these tomb reliefs, with their very restrained emotional expression, recalled that which was met with in many fragments in Greek anthology.

Royal Academy Lectures (continued).

DR. MURRAY'S third lecture on Monday afternoon dealt with the subject of sculptured pedestals. These were frequently adorned with bas-reliefs referring to events in the lives of the persons represented in the monument. Thus there was the monument to Polydamas, the athlete, with reliefs representing four of his exploits; these were known to have been by Lysippus, an artist who usually worked in bronze; but some fragments of the pedestal reliefs had been found at Delphi, and were in marble, though in a style founded on bronze treatment. Statues of deities were generally without reliefs, as there were no exploits to be celebrated; but the great temple statues of Athene and of Zeus, at Athens, appear to have had carved pedestals, though probably very low ones, on account of the height of the colossal statues. An illustration was shown of a three-sided lofty stele bearing a commemorative statue, the three-sided plan being probably a reminiscence of a tripod of Delphi. One archæological value of pedestals was that they frequently bore the sculptor's name, though, unhappily, there were many pedestals with names on them from which the sculptured figure had been lost. The Greeks were not averse to placing statues on columns, but they were always small columns, not above 15 ft. or so in height; the Romans exaggerated the idea by placing statues on columns so lofty that the statue was lost. The spiral bas-relief relating the exploits of the emperor, however, on the Trajan and Antonine columns was a fine idea; whence did it originate? There was a curious spiral stele of intertwined serpents, now at Alexandria, which commemorated the battle of Platæa, the spirals bearing the names of the States which had sent aid to the Athenians. Here we might find the suggestion of the Trajan column, actual representation being substituted for inscribed names. The sculpture on the Trajan and Antonine columns was of more historical than artistic interest, except in regard to the manner in which a rainstorm, which had saved Antonine's army from drought, was symbolised by a winged figure on the column. The pedestal slabs from Mantinea, now at Athens, and probably the work of Praxiteles, more particularly the Apollo and Marsyas subject, were illustrated. The figure of Marsyas in this relief has a curious and almost humorous expression of endeavour combined with a good deal of anxiety. A relief with the name of Bryaxis was of interest, because it was known that Bryaxis was one of the sculptors employed on the Mausoleum, but there were no fragments of the Mausoleum sculpture which could be identified with him on the ground of special style. A curious feature in chariot pedestals was the occasional employment of animals as supporters where the wheels should have been, figures of Pegasus, for instance, thus supporting a figure of Aphrodite on a pedestal of this kind. Lastly, Dr. Murray drew attention to and illustrated the reliefs on a throne in the Villa Ludovisi, especially that showing a figure (Venus?) rising between two nymphs, who spread out draperies to enwrap her. This was archaic in style; but was it a true archaic? The probability was that it was imitation archaic by a Roman artist of the first century, when there was much imitation of Greek archaic work. The best test in these cases was the drapery, which in archaic revival was more mechanical than in the true archaic, and (as in this case) ignored the distinction between two materials of costume which, as mentioned in the previous lecture, was so carefully observed by Greek sculptors.

Illustrations of the Great Masters.

WE have now before us nine parts of the publication of photogravure reproductions of pictures by the great masters down to the year 1800, which is being issued by Mr. W. Heinemann, to be completed in twenty-five parts, each part containing four large plates with an accompanying commentary by Sir Martin Conway. We noticed Part First on its appearance with all appreciation, and the remaining parts now received more than bear out the promise of the first one. It is a splendid publication, and it may be doubted whether such a fine series of artistic illustrations has ever before been issued at such a moderate price. The choice of subjects is being made with entire catholicity of taste, and represents some of the best works of painters of the most different schools. The photogravures have large margins, and are quite worth framing and hanging up, for those who prefer to treat them in that way.

Monument to Mr. and Mrs. Gladstone.

AT the Turner Studios, Glebe-place, Chelsea, there has been for some days on view the monument to Mr. and Mrs. Gladstone, which Sir William Richmond R.A., is executing for Hawarden Church. It is at present only a model in plaster, but the marble is to be put in hand at once. Eventually the supporting figures and the reliefs upon the base will be in bronze. The monument is in the mediæval form of a double tomb, husband and wife lying side by side; between them lies the crucifix, with the symbols of the evangelists at the points of the cross. The figures are clothed in simple draperies, Mr. Gladstone in academic robes; the eyes of both are closed as if in sleep. An angel forms a canopy,

somewhat like a cresting wave, binding over both figures, at the head of the tomb, with outspread wings. At the feet is the symbol of Wisdom. Around the base are figures symbolising the Christian religion; on one side are reliefs from Homer and Dante, on the other reliefs of the womanly virtues of Goodness and Compassion. The whole forms a striking work on a large scale. We hope the finished work will show happier and more refined architectural lines, which hitherto seem hardly to have received much attention; the straying here and there into the forms characteristic of the *art nouveau* does not add to the dignity of the work.

The Society of Painter-Etchers.

THE Exhibition of the Royal Society of Painter-Etchers and Engravers, at the rooms of the Water-Colour Society in Pall Mall East, is as interesting and varied as usual, and there seems to be at present rather a return in favour of genuine line-etching, and a less proportion of the works representing special methods which are only by a *façon de parler* included under the definition "etching," though the addition of the word "engravers" is perhaps intended to cover these. Among line etchings Mr. C. J. Watson's "The Long White Road" and "St. Riquier" (4 and 5) are excellent examples. Mr. A. Hugh Fisher shows his originality in conception of effect by his etching of "St. Etienne, Paris" (19), the upper part only finished and showing white against a nearly black background, the lower portion shaded away into half tint; and his versatility is apparent in the fact that he exhibits also a sheet of heads of tigers (23), which is one of the best things in the room. Mr. Haig shows in "La Madeleine, Troyes" (31) one of his highly worked architectural interiors, which are engravings on copper rather than etchings, and Mr. W. Monk has an excellent series of etchings, in the true sense of the word, of architectural subjects (32 to 36), including a powerful one of Waterloo Bridge seen in sharp perspective, the massive columns of one of the piers forming the foreground objects. Architectural subjects are indeed largely represented in the collection, and generally very well treated. The place of honour at the top of the room is given to some large and effective, but rather coarsely executed, works by Mr. Frank Brangwyn, of which "A Shipyard" (94) is the most effective; but one is tempted to think, in regard to these, that freedom of line is one thing and "scrawliness" (if we may coin the word) another, and that there is such a thing as being too ostentatiously rough in execution, even for so free an art as etching. Mr. Evershed's small and clearly executed views of portions of city scenery (99 to 104) are as good as usual, and a French artist, M. Bejot, contributes two very good London subjects in the same style (73, 74). In this neighbourhood are to be seen two charming little dry-point "marines" by Mr. Wyllie (64 and 70). At the north-east angle of the room are placed Mr. Alfred East's contributions, of which an aquatint under the title "A Clear Evening" (114), with the trees showing in dark masses against a sky of empty paper, is very effective, and represents what this method of work can best accomplish. Further down the room we are struck by the versatility displayed by a lady artist, Miss Mary E. Sloane, in three small subjects (143, 144, and 146), all of a totally different nature, and all equally well treated. "Bayonne" (152) and "Lymington River" (154), by M. Heseltine, deserve special notice; also those by Mr. Goff (187, 188, 192) and Mr. David Waterson, a name we do not remember; his "Dawn" (201) is a very fine little work with a grand sky. Sir C. Holroyd is a large contributor of works on a rather large scale, but of unequal interest; the finest is the "Wood-witch" (174), with its four great trunks of trees against the sky. The special feature usually added to these exhibitions consists of a series of eleven strange, fantastic, powerful engravings by Mantegna, of which the most remarkable is "Christ in Limbo"; there is a truly Dantesque power about this. It is strange to meet with this early Renaissance work in the midst of a collection of modern etchings; it seems to have come from another world of ideas—a world how far removed from that of to-day!

Lithographs by M. Fantin-Latour.

AT the Dutch Gallery in Brook Street is a fine collection of lithographs by M. Fantin-Latour. These are mostly purely ideal works, many of them symbolic illustrations of personages or ideas in romantic opera by Wagner, Berlioz, and Schumann, and Brahms, and one or two references to Rossini—an odd combination with the other names. One would have thought Mozart and Beethoven were worth the same kind of homage from another art. One or two of them are still more abstract; one, for instance, symbolises the Prelude to "Lohengrin," the central figure an angel holding aloft the Holy Grail; another represents "Musique et Poésie." This is a very poetic and intellectual use of the art of lithography, interesting in itself, and all the more so that these ideal scenes represent also a perfect mastery both of the technique of lithography and of the art of pictorial composition. Every drawing in the collection shows the hand of a master. Among the finest are the several love scenes between two figures suggested by Berlioz' "Les Troyens à Carthage," a series of small drawings all remarkable for the composition of figures and landscape; "Manfred and Astarté" (Schumann), a subject treated several times, but most finely in No. 42, where the figure of Astarté is of remarkable beauty; and "Poèmes d'Amour" (46), where again the female figure is of remarkable beauty of drawing and expression. The whole collection represents a remarkable form of art in black and white, in which this artist stands alone.

Illustrations of Old London.

THE Fine Art Society have got together at their gallery in New Bond-street a large and most interesting collection of engravings and drawings of London in the reigns of the Georges, to the number of 275. They are not, in the main, things to be regarded from the artistic or architectural point of view; indeed, many of the engravings of architectural monuments are exceedingly bad, both in regard to perspective and to truth of representation in detail; but in a historical sense the collection is of the greatest interest. It is not often that we have the opportunity of seeing so many illustrations of this kind collected together for study and comparison. Some plans of London at the early Georgian period are also included in the exhibition.

The Modern Gallery.

AT the Modern Gallery in New Bond-street is a collection of landscapes in oil and water-colour—mostly the former, by Mr. T. W. Allen. Many of these are very pleasing landscapes, though it cannot be said that the author has any distinctive style. There is a certain old-fashioned character about some of them, such as the small "Springtide" (106), which looks as if it might have been painted by Nasmyth. The largest picture, "The Queen's Sunset: Jan., 1901" (77), is fine in intention, but hardly realises its aim. Want of force in the foreground seems to be failing here and in other works. Among those which show more breadth and unity are "A Surrey Heath" (18), "From Darkness to Dawn" (22), a delicate effect of morning light; "A Tranquil Evening," water-colour (30), "A Surrey Landscape" (41), also a water-colour; "Russet, Brown, and Saffron" (46), and "A Surrey Cornfield" (57).

Herne Hill Free Library Competition.

THE Libraries Committee of the Lambeth Town Council seem to have some peculiar ideas as to the conduct of competitions. In respect of the competition for a Library at Herne Hill, it having been recommended that the plans of Messrs. Wakeford and Sons be accepted, Councillor Cook demurred, and thought the plans ought to be submitted to an independent arbitrator, and subsequently Councillor Evans moved that the designs should be submitted to an architect to be nominated by the President of the Institute of Architects. The Committee, he said, had themselves raised a suspicion as to the selection of the plan, and, in fairness to the other architects, there should be an independent opinion. This excellent advice was duly seconded, and opposed by Councillor Johnson, the Chairman of the Libraries Committee, who said their librarian was the best judge of the plans, and that if they had an independent assessor they would not be likely to get so impartial a result. "A member of the Society of British Architects (*sic*) might well have a favourite pupil, or know a friend with a favourite pupil, who had submitted a plan." This impudent suggestion appears to have been quite to the taste of most of the members of the Committee, who passed the acceptance of the original recommendation by a large majority.

THE SURVEYORS' INSTITUTION.—Our report of the last meeting of the Surveyors' Institution is unavoidably held over until next week.

THE ARCHITECTURAL ASSOCIATION.

AN Ordinary General Meeting of this Association was held on Friday last week in the Meeting-room of the Royal Institute of British Architects, at No. 9, Conduit-street, Regent-street, Mr. H. T. Hare, President, in the chair.

The minutes and some nominations having been read, the following gentlemen were elected members, *i.e.*, Messrs. F. J. Whittingham, Wrexham; C. Simpson, Putney; T. O. Foster, Ealing; G. F. Lake, Stroud Green; L. M. Gotch, West Ealing; H. V. German, Streatham Hill; I. H. German, Streatham Hill; D. J. Campkin, Sutton, and T. L. Pearce, Westminster.

New Premises Fund.

The President then announced the following further donations to the New Premises Fund:—Proprietors of the *Builders' Journal*, 10*l.* 10s.; Messrs. C. Stanley Peach, 10*l.* 10s.; W. Morrison, 10*l.*; J. D. Crace, 5*l.* 5s.; W. H. Lever, 5*l.*; F. Adams Smith, 2*l.* 2s.; Horace Porter, 2*l.* 2s.; T. S. Attlee, 1*l.* 1s.; L. V. Hunt, 1*l.* 1s.; W. J. Kemp, 1*l.* 1s.; C. H. M. Mileham, 1*l.* 1s.; J. B. Pinchbeck, 1*l.* 1s.; and A. H. Roe, 1*l.* 1s.

Mr. H. Tanner, jun., Hon. Secretary, proposed a vote of thanks, which was accorded, to Mr. J. L. Williams, for allowing a party of members to visit his three houses on Saturday, February 6.*

Mr. Louis Ambler, Hon. Secretary, announced a Camera and Cycling Club meeting on Monday, February 29, when a paper will be read by Mr. G. Trotman on "Gloucester."

Mr. Ambler also announced the following donations to the library, *i.e.*, "Quantity Surveying," by Mr. J. Leaning, presented by the publishers, Messrs. E. & F. N. Spon, Ltd.; "Graphic Statics," by Mr. E. Hardy, presented by the publisher, Mr. B. T. Batsford; and "Royal Insurance Building, Liverpool," by Mr. J. Francis Doyle, presented by the author. A vote of thanks having been passed to the donors,

The President gave notice of a Special General Meeting to be held on Friday, March 4, at 7 p.m. to consider the desirability of holding the Ordinary General Meetings on any other day than Friday.

Corner Houses.

Mr. W. Henry White then read the following paper on "Corner Houses":—

Last session I had the pleasure of preparing and submitting to you a short paper upon "Town Houses,"† dealing principally with houses shut in between party walls, and tracing the development of the town house from the XVIth century onwards. Incidentally, I mentioned that I had not dealt with corner or detached houses; this appears to have been sufficient for our committee to suggest the title of the present paper, which I will ask you, therefore, to consider somewhat as a sequel to my former effort, and also to permit me to treat the term "Corner Houses" with considerable latitude and to include "detached" houses in order that I may exhibit views to bear out my remarks, and to provide subjects for what I hope we shall have at the end of the paper—viz., a good discussion.

First, therefore, let us consider the question of "Corner Houses." Is this not a fascinating subject for the exercise of a young architect's flights of fancy? What an opportunity to show to the world at large "all he knows," and yet what pitfalls to be avoided. How many of our street corners have been made unattractive by the inartistic treatment of this problem, and, fortunately, on the other hand, how attractive such corners are when treated in a masterly manner by a capable architect.

To attain this skill is, I am sure, the aim of every earnest student present, and it has occurred to me that it might be interesting to all of us to see in a succession of views how some of our well-known architects have dealt with the problem. I therefore propose to show upon the screen a series of views of buildings which have been erected from the designs of architects, in most cases well known (at least by name) to all of you. I shall also show you views of detached houses and of some corner buildings, to illustrate a few points which I shall mention in passing.

Having described in my previous paper the leading points to be considered in planning a town house of the terrace type, and bearing these points in mind, it will be found that a corner plot frequently increases the difficulty of planning a well-arranged house—so many fresh elements are added to the ordinary problem, and there are possibly a greater number of solutions to be considered before the best is arrived at. But if greater difficulties are introduced the subject is more interesting and provides a wider scope for the architects' powers, and indeed the very awkwardness and difficulties of a site frequently enable the clever designer to produce a quaint and interesting piece of work. The disposition of the principal rooms, owing to questions of "aspect," may now become of vital importance, and, as in the built-in house, the position of the entrance, hall, and staircase will materially help to settle the type of plan to be adopted.

If the site is situated with one side to a principal street and the other to an unimportant street the client will, in most cases, expect the entrance to be in the principal street, and this one point will often hamper the development of the whole plan.

Where the side street is wide and quiet, I think it is desirable in the case of a corner house attached to another house, that the central hall and staircase type be adopted—this permits of the rooms being planned to face the street, but it is impossible to lay down rules for the development of corner sites—each presenting a different problem to solve, and each requiring special consideration.

I strongly recommend our students to collect, examine, and criticise, as many published plans and designs as possible, as by so doing they will learn a great deal, and also when possible make a point of seeing the building illustrated, study its position in regard to its surroundings and the points of the compass, and, if it occurs to you after mature consideration that the problem might have been solved in a better manner, jot down notes for future guidance.

As to the external features of the design of corner houses, here I think a little may be said as to a few things to be borne in mind whatever may be the style or motive we are working in, and the danger which appears to be most imminent is the unnecessary elaboration of the angle which is frequently treated as a thing apart from the general design, and has a "stuck on" effect.

If it be determined to give prominence to the angle treatment care should be taken to still keep it as an integral part of the design. I will allude to this again when we examine the views.

Now as to detached houses:—Except in some of our best thoroughfares and squares, there are few opportunities of erecting detached houses in the heart of London, but where they occur the architect has even more play for his skill, and I shall show you views of various detached houses upon the screen, which I hope will interest you and enable you to study what has been done by others, and help you to equip yourselves for dealing with similar problems when the pleasant opportunity arrives.

The slides which will be shown to you have been made from published illustrations and photographs specially prepared, and I think we may consider many of them as representing the work of some of the best known men of their day. In examining these works the chief point of interest to us appears to me to be to consider how very widely they differ in motive and style.

Very little unity of design exists between them—each architect appears to have been actuated by a different motive as to the design, and although we must admit that individuality is charming, I cannot help wondering whether this struggle for novelty is good for English architecture, good for the training of public taste, however charming each individual piece may appear to us.

When no two men in a profession seem to show any consecutive train of thought (as disclosed by their work) and produce such a variety of designs with no homogeneity of feeling existing between them, how can we expect the public to learn to distinguish between good and bad?

I cannot help feeling that, so long as our students are allowed to work upon individual ideas, so long will this heterogeneous work continue, and while such differences of style and aim exist between the masters I fear our students cannot hope to develop a vernacular style.

Municipal architecture, it seems to me, has, during the past few years, in the hands of our ablest men, made greater strides towards a development of our own vernacular style than has house architecture.

This may be, and, I think, is, the result of competition; where each competitor by striving for success, studies more closely the work of the best men of the day, and that work is a distinct carrying on and development of the XVIIIth century work; but there is no such motive with house architecture, where each man is left to his own devices and his client's instructions, and the work illustrated to-night bears out these views.

Of course, I submit my own ideas with all deference, and it may be that those views will not be shared by many of you; but as we have all been taught that the study of old work is absolutely essential, and the more we do study it the more we realise how important a factor in our education it must be, I think we ought to be able to deduce some lessons from it.

Briefly summed up, may we not say that the old work was more consistent as to style? It was a gradual development from one period to another right down to the end of the XVIIIth century. It was always suited to the requirements of the age and the materials used, and possessed a breadth of treatment, from the cottage to the mansion, the village church to the noblest cathedral, far and away beyond that of the average work of to-day.

I am speaking as a student to students, and I ask, Do we show these same qualities to-day in the majority of our work, and, if not, what is the reason? Is it lack of the knowledge possessed by the older architects, or is it that the requirements of the XIXth and XXth centuries are so much more complex that the old rules fail? or is it that, in the multitude of individual teaching, of books, of illustrations, of facilities for travelling, of the innumerable rules and regulations laid down by the many authorities who now have a voice in connexion with our work, and of the lack of a genuine School of Architecture in England, that we are weakened in our efforts and our architecture lacks homogeneity of feeling, and that, in consequence, our streets show the architectural patchwork now presented to our view?

I do not wish to be misunderstood as to my object in bringing forward this variety of work for your inspection, but the idea has been forced upon me by the collection of these views that it is an extraordinary fact, which has to be, or ought to be, studied and analysed; that it is possible in such a comparatively short time for so many different conceptions of the same problem to have been evolved from so many good men.

Here we have, at any rate, the architectural training of the student to foster, and if it be determined by those best qualified to judge, that it is for the good of architecture that there are so many varieties, call them "designs," "styles," or what you will, it is interesting to bring them before our notice for study and comparison; if not, is it not also interesting to study them, to ponder upon the kind of training which has produced them, and to consider how far it is possible to deduce any practical lessons from such a review?

I hope you will not think I am advocating a deadly monotony in design, or that I think it advisable to slavishly copy old work. Careful study of the latter will show how infinitely full of variety it was during any period of English architecture down to the end of the XVIIIth century, and at the same time it was consistent in design and motive.

In my last paper I pointed out how the work of Mr. Norman Shaw had developed, until, at the close of his professional life, he got back to a true development of our own vernacular style, as instanced by the house in Queen's Gate and his splendid work "Chesters." Now, supposing Mr. Norman Shaw had commenced his career with this period of work, it is interesting to speculate upon how he might have developed it; and I submit for our Committee's consideration whether, in our classes of design, if the students were asked to submit designs based upon our own vernacular work instead of what appears to be the case—viz., left to bring in more or less crude ideas, the essence of which seems to be to strike out something novel—such a course might not be productive of good and lead to more thoughtful and consistent work than is now the case. I do not believe this course would cramp the man of genius, and it ought to improve the work of the average student.

Mr. Statham has said in one of his books: "Architecture is now, and must be for the future, a personal art, like sculpture and paint-

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* See our issue for Feb. 13, page 166.
† See our issue for March 28, 1903.

ing, in which the individual architect gives his impress to his own work, only influenced, more or less, like the sculptor and painter, by the prevalent taste and tendency of the age."

Well, if that be true, our aim, as architects, should be to try and keep the taste of the age, so far as architecture is concerned, within the bounds of reason and good sense, and so that the public may realise we act up to our motto—viz., "Design with beauty and build in truth."

Now, you may be saying to yourselves, What have these remarks to do with "Corner Houses"? My reply is, that they are thoughts which have forced themselves upon me in studying the subject, and we will now proceed to the views, and then, I think, you will see that they have considerable bearing upon the question.

[About eighty views were shown to illustrate the paper.]

A communication on the subject from Professor Beresford Pite was also read. Professor Pite said it was very true that a review of recent house architecture displayed extraordinary variety of conception and ideal. It might appear to a foreigner that each architect here was striving for his own hand in the struggle for originality, and was regardless of any consistency, and probably also without the intellectual trammels of a sound education. Such criticism was not easy to resist. Intimate acquaintance, such as was possessed by every architect or student who felt drawn to Friday morning and its building papers with a zest not felt for other days, however, showed that there was method in the madness, and it was in our inability to think for ourselves, independently and academically, that our liability to pursue so eagerly every fashion and phase of a master or type found such unregulated scope. There was a personal element in published current designs from which we cannot dissociate ourselves, and we follow leaders as inevitably as Court dressmakers. He did not know that it was any good to regret this tendency in the absence of a better one. It was a sign of the age. Time was not taken to study and criticise design. The facility in draughtsmanship which was attainable in a pupil's second or third year was often his full equipment for the practise of design, and he, no wonder, hungrily devoured the notions of modern originators, assimilated and evolved reproductions without at all realising that such designs were not in any sense serious architecture, worthy of himself or of his art. The return to tradition, he thought, was practically impossible—we are our own tradition, and the Gothic Revival was as much a tradition to us as the Renaissance was to Elizabethan and Jacobean designers. The violent progress of architecture during the past century had rendered useless the traditions and design of the old masons and carpenters in whose hands much of the house architecture of the pre-Victorian period was practised. These traditions of workmanship were, he feared, as dead as Queen Anne herself, and we should not be understood by the common artificer of our day if we invoked them as his ideal. Machinery, technical class training, decay of apprenticeship, and many other influences have now to be reckoned with in the building trades, and we can only do our best to pick up the threads in our own hands and weave them with intelligence and sincerity in desire to do everything that is best under all circumstances, whether of brickwork, joinery, sanitation, or decoration. Our artistic traditions are our own, they lie in our clients' lives and desires and in our own intelligence and studies. The fountains of inspiration are ever open to us in the study of all noble building work—Greek, Roman, or Mediæval—and in the work and ways of the individual giants of the Renaissance—even of the Gothic Renaissance—so much nearer to us; and in a hearty appreciation of the fact that it is ours to translate current life into solid materials will lie our road to architectural success.

Mr. Arthur Keen, in proposing a vote of thanks, said that if Mr. White had not kept closely to the subject of his paper he had, at any rate, given material for reflection on matters that lay at the root of all successful design. It seemed hopeless now to expect a return to any uniform style of architecture or even to uniformity of taste and judgment; the day for that had gone by; but there were certain principles that govern all good design, whether in one style or another or in no recognised style at all, such as suitability, regard for material, self-restraint, and so forth, and it appeared to him that in designing corner houses the quality of concentration was too often neglected. In visiting Knowle at Sevenoaks lately he was impressed with the importance and value given to the entrance gateway by the almost monotonous reflection of the long row of gables on either side, all alike and with little three-light windows under them. The ordinary way of building town houses in terraces imposed a certain uniformity and breadth of treatment which was of great possible value in connexion with the design of the corner building, and it was unfortunate that an opportunity for the effective treatment of one or two important features was often killed by too much being attempted, and only a confused and insipid result being reached. Now, in corner houses it seemed to him that the actual height of the building had an important bearing on the method of design. When the building was low and the roof could be seen a great point should be made of the roof and its gable and chimneys and everything else should be subservient to these. Where the building was high and the roof could not be well seen the main effect should be gained by a fine grouping of features on the skyline, and, as a high building was usually a large one, a corner turret might perhaps be introduced. A turret was, however, a dangerous thing to attempt, and it should never be used unless the building was large, so that it could be big enough to preserve its individuality. Turrets generally failed by being so small as to appear like something stuck on to, or growing out of, a building, instead of being an integral part of it, and this appearance was commonly intensified by turrets being over-windowed. The one on Mr. Shaw's St. James-street building was a good example. It had brickwork enough in it to look strong and safe; it asserts itself boldly by starting near the ground, instead of in a half-hearted way out of the roof, and it stands up high enough to get clear of its surroundings and to have a good roof of its own, which, moreover, connects the turret to the rest of the composition by running back and covering quite a considerable portion of the building. An interesting point in connexion with this building was that although it was as fully decorated as any in London, this elaboration of work was not allowed in any way to interfere with the essential points of the design—namely, the gables, the turret, and the ground floor arches. It was only used to give scale and richness without any suggestion of fussiness or confusion. However, the subject of individual features was one that might be discussed at great length; the main point he wanted to emphasise as a small contribution to the subject was that a corner house, coming as the termination of a perhaps uninteresting row of buildings, was the opportunity for showing some well-designed feature to great advantage; the choice lay among many possibilities; it must be made with good judgment, and when it had been made everything else must become subservient to it.

Mr. Maurice B. Adams, at the invitation of the President, in seconding the vote of thanks, said that Mr. White had taken a great deal of trouble in getting together the illustrations he had shown, and the choice he had made was certainly a very catholic one; but he could not help thinking that Mr. White had overestimated the importance of what. on the surface of things, might appear to be too great an individuality displayed in these works, because of the diversity of character which was observable in looking at them in detail. But, on the whole, the building shown did carry on some degree of continuity. For instance, in the case of Mr. Norman Shaw's work at the time of his building at the bottom of St. James's-street, and Mr. Ernest George's work, and the work of others of the same school, there was noticeable a continuity combined with an individuality of treatment which did create for the time being a sort of school; and now, when others were working in what is called the Late Classic style, surely there was a certain degree of continuity in their work also. He did not take the despondent view that some had entertained; later on we should develop something, and probably it would be worthy of being classified as a type of architecture of a very definite kind. There was surely not much difficulty in ascertaining the period when the buildings were erected of which they had seen views. Street's Gothic work was essentially work of its time; it was all carried on in the same sort of definite way. Obviously no one had changed more entirely than Mr. Shaw himself! The last work by Mr. Shaw illustrated during the evening, at the corner of Queen's-gate and which he admired extremely, had the most ingenious and clever plan, but was not its style externally brought about, to some extent, by the material in which the architect was called upon to work, and most certainly it did express his intentions. There were some other rather effective corner buildings which might have been mentioned. The theatre by Mr. Runtz in the Strand was in its way striking as well as satisfactory, and that induced him to say what could not be said too often, *i.e.*, that our work is not large enough, nor simple enough. Contemporary buildings were often lacking in dignity because there was so much detail in them; it might be thought by some that the new "Gaiety" looked coarse in parts of its detail, but at any rate it was bold and imposing, and when one come round Lancaster-place the general composition presented something worthy of the occasion and the effect is extremely interesting. The ingenuity displayed by the architects who built the corner houses they had seen views of, and the way some of them had arranged their staircases, was particularly fascinating, especially those by Mr. Shaw. He had often looked at and studied his plans with admiration, and they always appeared to have a fresh interest each time they were looked at, which was one of the characteristics of all good architecture. They could not but notice the thought which Mr. Shaw had put into his work; unfortunately, the plans of many of our architects suffered because of the absence of such thought. Scale in a building was most essential, but thought was equally so. Much of the work of the Association students appeared to be quite above the average and free from the sort of thing Mr. White reflectingly referred to when he was criticising students' work. Some of the Association student work was admirable, and he doubted whether their predecessors of thirty years ago would have done anything as good. Therefore, there were reasons for encouragement and for persevering in the better education of students. It was as well, too, not to discourage students by making them feel that there was this lack of harmony in contemporary work. Students must go to someone for inspiration, and they could not do better than follow the work of the President and others who had shown them what to do and how to do it. Young men should be encouraged to keep on working and trying, and if they continued to do so on the lines indicated, they would make worthy successors of those whose work had been seen that evening.

Mr. Henry Lovegrove said there was one thing which struck him in London, especially in some of the older houses, *i.e.*, the number of bulged flanks to corner houses, and he knew from observation that there was scarcely one in fifty which was perfectly vertical. He thought that the sanitary arrangements in some of the houses plans of which they had seen were very bad, but the hall was often very cleverly arranged. There was a tradition amongst a good many people that a corner house was not a healthy one, but he did not know why that was. He thought it would have been better for architecture had Mr. Norman Shaw retired a few years earlier than he did, for all architects were not Norman Shaws. Less able men, following some of Mr. Shaw's later work, did not succeed in getting good proportions in their buildings; and, instead, they got eccentricity, and the result was often failure. A development in such a direction did not seem promising for good architecture. In walking about London he felt that Ruskin's teachings were not followed as they should be; there were too many shams, too great an attempt to attract attention, and this was not good for architecture. Still, there were some architects who were evolving, not a new style, but something that was, perhaps, based on the best in old styles adapted to common-sense requirements; elevations were made to fit the plan and to express the purpose of the buildings.

Mr. Edmund Wimperis said he had been greatly interested in the views shown and in the suggestions in the paper. The one impression he had derived from the views had been this, *i.e.*, that the men who could do a good house in a street could do a good corner house, and that the men who could not do a good house in a street could not do a good corner house. There was no doubt that a corner, especially if it was a corner of two streets meeting at an acute angle,

did tempt the architect into the perpetration of a turret, but it was limited to Mr. Shaw and perhaps half a dozen other masters of the art to make the turret a satisfactory feature. The turret treatment, of course, introduced the vertical principle into the treatment of the front, and he always thought that verticality of treatment was an overmastering principle and invariably tempted one to give more than one could. If they got a corner or angle emphasised by a turret, in nine cases out of ten it produced the feeling with regard to the rest of the front that there must be something to balance it. In the plans they had seen the difficulty of the corner treatment came out very clearly and in the most interesting plans the corner was not emphasised. As to what Mr. White had said about the enormous variety in the work carried out, that variety was, and must be, a very healthy sign for the architecture of the future. There was no doubt that architecture was going through a state of transition—almost a renaissance of architecture in England. The improvement in architecture, more particularly in the architecture of municipal buildings, was an improvement generally; there was no doubt about it. If they took the average work of architects of past days—he did not mean the work of men who had survived the criticism of a century or two, but the average work of the average architect—they would find that it followed on traditional lines. This was not a very heroic virtue. To say "That is the old groove, and I, for one, mean to run in it" was not good for architecture. That practice led, finally, to the work of the early Victorian period and to the great exhibition. The work of the younger men of the present day, particularly the work of the Association students, gave promise of a high average of work, and in the work of young architects now practising, but who had not had time to make a name, there were many indications that architecture was not going to suffer at their hands, but that it would be raised to a very high state of excellence.

Mr. Theo. Moore said he disagreed with Mr. White altogether, though he acknowledged that Mr. White had given them a valuable series of views. Mr. White's conclusions seemed to be that he wanted architects to found a school of architecture. If we had that school we should get here in London something like what one saw in Paris, and he did not think that that would be good for architecture. He thought that London was one of the most beautiful cities in the world, and the beauty of it consisted largely in the variety and originality of its architecture.

The Chairman, in putting the vote of thanks to the meeting, said that the first thing which struck him was that the majority of the views they had seen were from a German publication, and he thought that that was a great reproach to English people. If Germans produced the best illustrations of English architecture, then we ought to be ashamed of ourselves. The illustrations they had seen were certainly excellent, and he did not think we had in England any book which gave such an admirable collection of views of architecture of our own country. He had been a little disappointed that Mr. White had not said more about planning of corner houses. That was a distinct problem, and it demanded a great deal of ingenuity very often. The ordinary corner of a street was a difficult thing to plan, but when the problem was an internal corner of a square or something of that kind it was an extremely difficult matter. As a rule the treatment of an external corner did seem to tempt an architect to design a turret, and that was a feature which had been very much overdone. There was a certain amount of affectation in sitting down to design a corner and providing a turret, and he did not see the necessity for it; nor did he see why the corner should not be treated as a corner without any turret. It was possible, as they had seen, to provide an admirable treatment without any turret. In regard to Mr. White's reflections as to the extreme variety of our current architecture, his (the Chairman's) view was that it was very much to be regretted that there is so much variety and such a want of unity in the aims of our architects. The right point of view seemed to be that, if the general body of architects were working with a certain amount of unity of aim and were striving after the attainment of some definite end in unison, the cause of architecture would be advanced much more than when architects were pulling in opposite or contrary directions. What seemed to him to be at the back of this variety was the lack of any system of architectural education in England. Hitherto there had been no recognised system of educating an architect—no course of training through which a student ought to go in order to acquire the knowledge which he ought to have in order to carry on the work of his profession; and in that way we were very much behind other countries, particularly France, and more and more every year in the case of the United States. In comparing English architecture or the architecture of London with that of Paris, we took a rather narrow-minded and insular view. We spoke of London being the most beautiful city in the world—or in Europe, at all events—and referred to Paris as monotonous and uninteresting. His own view was that that was quite a wrong opinion. Certainly, in coming from Paris to London, one could not help being struck by the extreme squalor of much of the architecture of London and that, he thought, was largely due to the fact that here we had not got the organised system of architectural education which the French had had for many years. He looked forward to the day when we should have such a system in England. He did not think that organised education would fetter anyone; it did not do so in any other country, and architects had the same freedom abroad that we have—but it was on organised and well-developed lines. The effort the Association was making to systematise the education of young architects would have wide-spreading results. The architecture of the future would be just as English as it is now; the only difference would be that it would be backed up by a thorough knowledge of the history of architecture of past ages, which would result in a great forward movement in the future, when we should get what was generally called, for want of a better term, a national style. There would be just the same variety as now and the same individuality, only it would be of a very much higher class and would tend to promote the development of all the kindred arts. In the vote of thanks to Mr. White he would include thanks to Mr. S. Oetzmann, who produced the photographs thrown on the screen that evening.

The vote of thanks having been agreed to,

Mr. White, in reply, said he did not expect them to agree with all he had said, but he thought such a paper might cause a little thinking among architectural students. The subject was one on which there could naturally be a great diversity of opinion. A restraining hand was sometimes necessary when designing.

> "Oh for the wizard hand of patient skill
> To bring forth beauteous order from this pile
> Of rich but wild confusion."

That was the pith of the matter; and, as in the case of Sir Christopher Wren, who went through the land and carried out a series of works—one could not call them monotonous, for they were all varied—so he trusted that we should some day have a school of architecture and in the Association it might be expected to start. The example of their President's work ought to assist them very much. He desired to add his thanks to Mr. Oetzmann for the time he had given to the preparation of the slides they had seen.

The Chairman announced that the next meeting would be held on March 4, when Mr. J. W. Simpson would read a paper on "Schools."

The meeting then terminated.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

A SPECIAL general meeting of the Institute will be held on Monday, the 29th inst., in order to elect the Royal Gold Medallist for the current year. The Chairman will move, "That, subject to His Majesty's gracious sanction, the Royal Gold Medal for the promotion of architecture be presented this year to M. Auguste Choisy, Inspector-General in the Service des Ponts et Chaussées, Paris."

The ninth general meeting will be held at the conclusion of the special meeting, for the following purposes:—

(1) To elect candidates for membership under By-laws 7, 8, and 9.

(2) The following resolutions to be moved on behalf of the Council:—"That the necessary alterations to the by-laws be drafted and submitted to a special general meeting to provide that after December 31, 1906, every person desiring to be admitted a Fellow shall be required to have passed the examination or examinations qualifying him as an Associate; but that, in exceptional circumstances, the Council shall have power to dispense with such examination or examinations. Further, that during the intervening period the doors to the Fellowship be opened wider than at present, so that no reputable architect eligible under the Charter for election who desires to join the Institute as a Fellow should be debarred from doing so."

(3) The Council will also submit the following amendments to the "Suggestions for the Conduct of Architectural Competitions":—Clause 2 (*a*) to read as follows—

"To draw up the particulars and conditions (as far as possible in accordance with the principles herein set forth) as instructions to competitors, and also to advise upon the question of cost, and the amount and apportionment of the premium or premiums.

Note.—In drawing up the Instructions to Competitors it is desirable to divide them into two distinct classes:

(i.) *Conditions*—*i.e.*, those which must be strictly adhered to.

(ii.) *Suggestions*—*i.e.*, those which are merely optional or of a suggestive character.

Clause 7: Delete entirely.

Renumber clauses 8, 9, 10, 11 as 7, 8, 9, 10 respectively.

Clause 12: Delete all first paragraph and renumber the second paragraph beginning "It is essential . . ." as clause 11.

Add the following clause as the new clause 12:

The author of the design placed first by the assessor or assessors should be employed to carry out the work, and he should be paid in accordance with the Schedule of Professional Practice as to the Charges of Architects sanctioned and published by the Royal Institute. If no instructions are given to him to proceed within twelve months from the date of selection, or if the proposed works are abandoned by the promoters, then the selected architect should receive payment for his services in connection with the preparation of the competition drawings of a sum equal to 1¼ per cent. on the amount of the estimated expenditure.

Mr. H. Hardwicke Langston has given notice that at this meeting he will ask the following question:—

"Is it in the power of the Council to say whether it is the intention of the Registration Committee, in view of the great interest attached to the movement for the statutory qualification of architects, to take a poll of the members of the Institute upon the general principle involved?"

CARPENTERS' HALL LECTURES:

OUR ATMOSPHERE AND ITS RELATION TO HEALTH.

THE first of the usual February-March series of free lectures on matters connected with building, arranged by the Carpenters' Company, was given on Thursday evening last week at Carpenters' Hall, London-wall, Mr. Percy Preston, Master of the Company, presiding.

The lecturer was Professor Vivian Lewes, Royal Naval College, who delivered an interesting lecture, entitled, "Our Atmosphere and its Relation to Health," which was fully illustrated by a number of experiments. He first dealt with the subject historically, mentioning the first known experiment on the atmosphere, *i.e.*, Aristotle's attempt to weigh the air in the year 350 B.C., and the subsequent investigations and experiments of others. It was not until the latter half of the XVIIIth century that the atmosphere began to have what might be called a chemical history, and it was then discovered that the air was not an element, but that it contained elements simpler than itself. The lecturer referred to the laborious and valuable researches of Lavaisier, Cavendish, Priestley, and others, and stated that Cavendish made over 400 analyses of air in London in one year, going "even as far as Maida Vale," as he said, for his samples. The atmosphere contained 20 per cent. of oxygen and 79 per cent. of nitrogen, and it was the oxygen in water that made the possibilities of a good drinking-water in towns, for it burnt off the organic impurities which got into the water somehow.

The lecturer then made a number of interesting experiments to show with what vigour anything that will burn in air will burn in oxygen gas, and also that many things which we do not regard as combustible will burn in it. Phosphorus, when brought into contact with oxygen, gave one of the strongest lights, and zinc

and steel would burn like tinder in this wonderful gas. The steel spring he used for the experiment was quickly burnt up, and it left the sides of the glass jar in which the oxygen was coated with iron rust, which was formed with great rapidity. Nitrogen would not combine directly with anything, but by indirect means it would form more compounds than any element known, and it would combine indirectly into five oxides. Oxygen and nitrogen were the two main constituents of the atmosphere, but there were other constituents which used to be called impurities, and there were at least three things which were as much part of the atmosphere as oxygen and nitrogen. In the first place, there was carbon dioxide, which was always present in the atmosphere, and which nature used in the proportion of 4 parts in 10,000. In that proportion carbon dioxide was not an impurity, but an essential constituent of the atmosphere, without which it would be impossible for vegetation to live, and it was an impurity only when it exceeded that quantity. In an over-heated room we could get carbon dioxide above its proper proportion, and if it increased up to 10 parts in 10,000 it became a real impurity and affected health. Water vapour was another constituent which always existed in the air, and according to the temperature. When the air was warm there was a large amount of water vapour in it. In that hall there might be 12 grains of water suspended in every cubic foot of air, but that was not an impurity; life without that would be impossible, for if the air were absolutely dry in three or four weeks we should be converted practically into mummies. Another constituent of the air, a very minor one, was ammonia gas, but it was needed in nature for plant life.

The lecturer then described how carbon dioxide was produced, and how nature had provided for its consumption by vegetation, and how the proper proportion of the two constituents oxygen and nitrogen was secured. Faraday estimated that the oxygen taken from the atmosphere daily was 3½ million tons. The balance was restored by trees and plants, which were continually providing oxygen. So long as we got fresh air there was, other things being equal, no chance of getting bad health. But we put up a barrier to nature, and we insisted on having our air comfortably warmed. If we wished to escape the penalties, we must do our best, by providing efficient ventilation, to help nature carry on her work. By breathing hot, tainted. air we should get in an ailing condition; by getting plenty of fresh air we should find that half the petty ills of life would disappear.

BUILDERS' CLERKS' BENEVOLENT INSTITUTION.

THE annual general meeting of this Institution was held on the 23rd inst. After the monthly committee meeting business, Mr. F. S. Oldham vacated the chair in favour of Mr. F. G. Minter, President for the new year, and the thirty-seventh annual meeting was held.

The Secretary (Mr. J. Austin) presented the report, which expressed regret that, as the result of continuous depression in trade, donations and subscriptions had fallen off. The year's annual subscriptions were 233*l*. 12s., donations, 271*l*. 17s. 6d.; dividends, 168*l*. This, with a balance of 26*l*. 2s. 11d. from the diminution account, brought the total income to 699*l*. 12s. 5d. Of this amount 606*l*. had been paid in pensions, twenty-four widows received 24*l*. each, and an aged clerk 30*l*. per annum. Altogether the year's expenditure had exceeded the income by 13*l*. 18s. 11d. The report also expressed regret at the death, during his year of office, of Mr. Deputy Greenwood, the late President.

Mr. E. Brooks (hon. treasurer) read the financial statement for the year.

The Chairman, in moving the adoption of the report and balance-sheet, said they must not be surprised at finding the Institution was not in as flourishing a condition as could be desired, as there was no question that just now trade in the country was very bad. However, they must all pull together; the cause for which they were working was a thoroughly good one, and in every way deserving support, and with hard, earnest work he trusted they might retrieve their position and that the Builders' Clerks' Benevolent Institution would do as much in the good direction they would travel as ever they had done—aye, and better if possible.

INCORPORATED CLERKS OF WORKS ASSOCIATION.

THE twenty-first annual dinner of this Association was held on Monday in the King's Hall, Holborn Restaurant, Mr. E. T. Hall presiding. There were also present Messrs. F. T. Baggallay, T. E. Collcutt, J. M. Deacon, J. Hutton Freeman, H. T. Hare, J. Brady, J. T. Rees, and a large gathering of members and friends of the Association.

The loyal toasts having been proposed by the Chairman and honoured,

Mr. J. Aitchison suitably proposed "The Architects and Surveyors," coupled with the names of Mr. H. T. Hare and Mr. J. M. Deacon.

Mr. Hare, in replying for the architects, said he had heard it stated that there were three essentials to the successful carrying out of a building contract, and they had been called the A.B.C. of building, *i.e.*, architect, builder, and client; but he thought there was a serious omission, for the clerk of works should have been added as a fourth essential. He was quite sure that any building contract of any importance would be carried out in a very inefficient manner without the assistance of a competent clerk of works, and architects would be in a most unfortunate position if they did not have the assistance of clerks of works. When buildings were carried out at a distance from the architect's office, as they often were, and it was only possible for the architect to make an occasional visit to a building, he was almost entirely in the hands of the clerk of works, for it was in the power of the clerk of works to make or mar a building. The clerk of works was a sort of policeman over the builder; he had to interview and converse with the client; generally speaking, he occupied a most important and responsible position, and if he were not competent to carry out his duties as they should be carried out, the building suffered. He was happy to say that he had never had occasion to complain of the incompetence of a clerk of works, and he believed that they were a thoroughly trained and high-minded body of men. In so far as the Association assisted in the training of its members, they would receive the fullest sympathy from architects.

Mr. J. M. Deacon, in responding for the surveyors, referred to the work of the Surveyors' Institution, and said that the Institution examined young surveyors and thus helped them to become capable surveyors. There was some little dissatisfaction towards the Institution felt by some surveyors. A small party of surveyors recently met and agreed that the Institution did not properly represent them, and they had signed a memorial asking the Institution to alter the rules so that automatically in the future two quantity surveyor members should always be on the Council. Besides that, the Institution had been asked to allow the quantity surveyors in London to elect five members amongst themselves to work with the two members of Council, and to deal with all questions relating to quantity surveyors. The Institution had also been asked to show in their list of members in which branch of the profession the members were engaged, *i.e.*, as quantity surveyors, land surveyors, or auctioneers.

Mr. J. Roberts then proposed "The Worshipful Company of Carpenters," remarking on the good work the Company had done for the building industry by their lectures, examinations, and workshops.

Mr. J. Hutton Freeman, Clerk of the Company, replied. The Company was only too glad to help clerks of works in the way they did, and to carry on the work that had been referred to. The Company must have a specially cordial feeling for the clerks of works, because in the old days the masters and wardens of the Company exercised somewhat the same powers that clerks of works do now—they viewed buildings, and if anything were wrong in the construction they had power to condemn it and have it pulled down. The Company were now making an effort to help on the cause of forestry in the country. and he hoped that they would be supported. Many people considered that timber was even safer than steel in cases of fire, but there was no use in making wood non-inflammable if the supply of wood was going to fail us, and, as they knew, there was a great shortage in the supply.

The Chairman then proposed the toast of the evening, "The Incorporated Clerks of Works Association of Great Britain," coupled with the name of Mr. J. T. Rees, the President. The Association was one primarily for social intercourse between clerks of works, but in addition to that they desired to raise the status of the clerk of works, and they must all be aware that that status had been raised. This was the first year of the incorporation of the Association, and he was told that a further advance was contemplated, *i.e.*, in the direction of organising a benefit fund, which would be a most useful feature in connection with the Association. It was a great advantage that men who had honestly done their work, and yet fell out in the race of life, should be helped in a time of temporary need. As an architect, and speaking for architects, he could say that they wished all success to the Association.

Mr. Rees, in response, said that they had made more members this year than they had done for many years past, and he believed that the Association would go on prospering. The feeling which existed amongst the members augured well for the success of the Association. A clerk of works who joined them would never regret doing so, and he appealed to all those who were not members to join. This was an opportune moment for doing so; in the very near future they might inaugurate a system of admission by examination, and that would be rather distasteful to men rather advanced in life. He desired to take the opportunity of thanking Mr. J. Pain, their Hon. Secretary, for the great amount of work he had done for the Association.

The concluding toasts were "The Press," proposed by Mr. J. Brady, Editor of the Clerk of Works' *Journal*; "The Visitors," proposed by Mr. W. Pitts, Vice-President of the Association, and "The Chairman," which was proposed by Mr. R. H. Kellond.

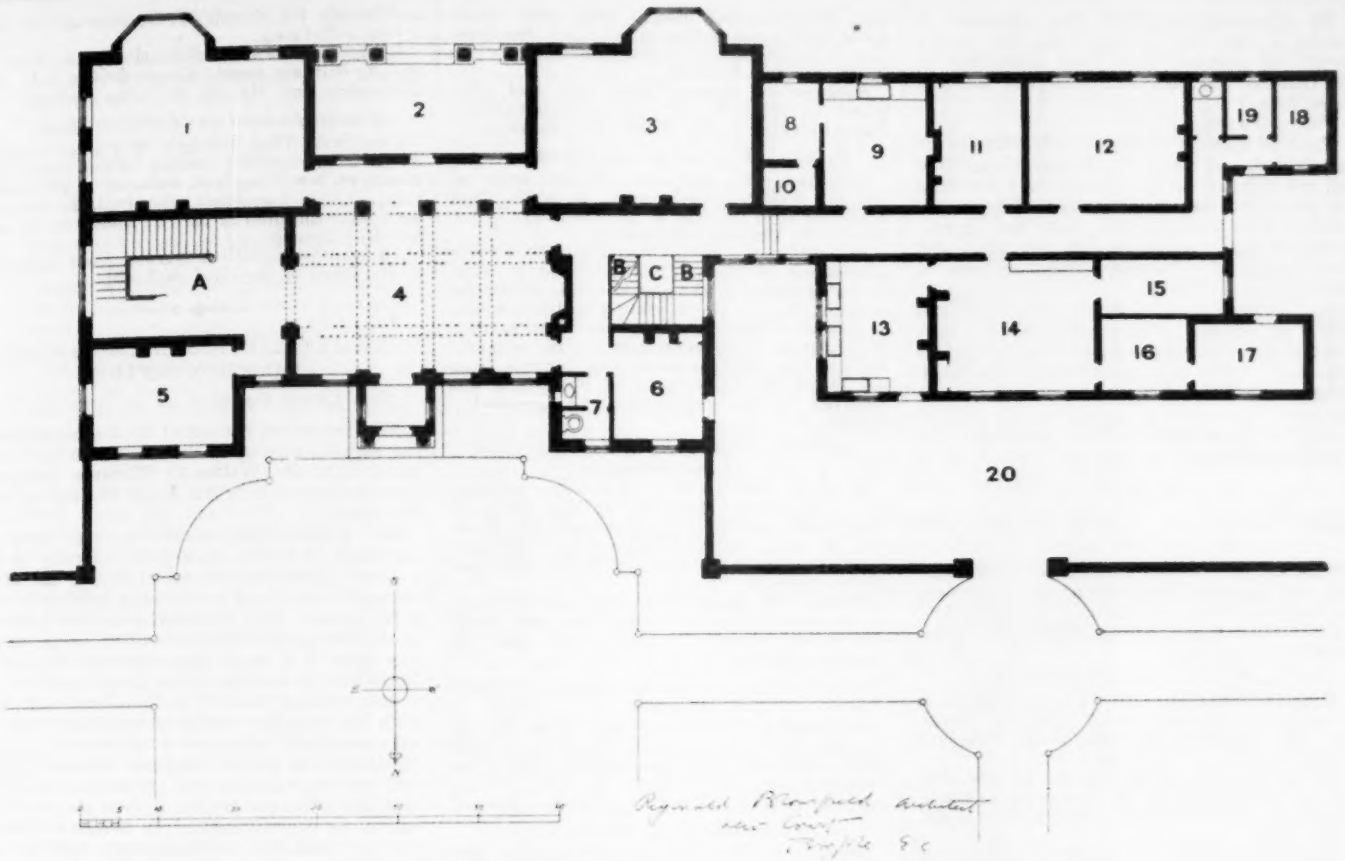
ASSOCIATION OF MANAGERS OF SEWAGE DISPOSAL WORKS.

AT a meeting of the Yorkshire District Branch of the Association of Managers of Sewage Disposal Works, held on Saturday last at the Westminster Hotel, Leeds, Mr. James Ashton read a paper on "The Disposal and Utilisation of Sewage Sludge." Mr. W. D. Scott-Moncrieff presided, and remarked that Leeds and the neighbouring towns, more especially Bradford, were situated in circumstances of the greatest difficulty as regards the disposal of their sewage. These towns were far from the sea, and now the sea could not be utilised as a means of the disposal of the sludge, some other method must be adopted.

Mr. Ashton remarked that during recent years they had been told that they need have no sludge at sewage works, but his opinion was that there would always be sludge, no matter what system was adopted or however well managed any particular system might be. The more sewage obtained by increased population, the more exacting were the rivers authorities, and consequently a greater amount of sludge accumulated at the works. He dealt fully with the disposal and various methods of drying and pressing sludge, and remarked thaf sludge, if treated properly, could be made to very great use as a manure. The sludge of every town varied in its composition, and in towns where wool-scouring and other greasy processes were carried on, there was great difficulty in pressing the sludge. There was no place where more trouble in this respect was met with than in Bradford. Mr. Ashton, in closing his paper, said that what he was desirous of pointing out was that sludge was useful and valuable, but that in the present condition of treatment it was a nuisance. The advantages to be secured by adopting a method of drying sewage sludge subsequent to pressing would be that the present bulk would be reduced to less than one-half; it would be perfectly dry to handle, it would be in a thoroughly sanitary condition, and would be worth anything from five to twenty shillings per ton as a manure.

THE LONDON WATER COMPANIES AND ARBITRATION AWARDS.—The special court of arbitration announced on Monday its awards on the claims of the remaining water companies which are to be absorbed by the Water Board. The undertakings have been valued as subject to the Chamberlain's sinking fund. If the House of Lords holds that the companies are free from the sinking fund, the awards will be increased:—

	Claim.	Award.
Lambeth	£5,466,923	£4,301,000
Southwark and Vauxhall	£5,513,946	£3,603,000
Chelsea	£4,750,000	£3,305,000
Kent	£2,981,520	£2,712,000



References to Plan.

GROUND PLAN.

1. Drawing Room.
2. Loggia.
3. Dining Room.
4. Hall.
5. Smoking Room.
6. Gun Room.
7. Lavatory and Water-closet.
8. Butler's Bedroom.
9. Butler's Pantry.
10. Strong Room.
11. Housekeeper.
12. Servants' Hall.
13. Scullery.
14. Kitchen.
15 and 16. Larders.
17. Dairy.
18. Lamps.
19. Boots.
20. Back Yard.

A. Main Stairs. B B. Back Stairs and Stairs to Cellar. C. Lift from Cellars to Top Floor.

House at Medmenham. Plan. (See "Builder" for February 20.)

PLAN OF HOUSE AT MEDMENHAM.

This is the plan of the house by Mr. Reginald Blomfield, the perspective view of which appeared in our last issue. The plan was sent to us too late to appear along with the view.

THE LONDON COUNTY COUNCIL.

THE usual weekly meeting of the London County Council was held on Tuesday, in the County Hall, Spring-gardens, Lord Monkswell, chairman, presiding.

Loans.—On the recommendation of the Finance Committee it was agreed to lend Bethnal-green Borough Council, 8,000*l.* for the erection of stables at depôt, and for paving works; Poplar Borough Council, 5,895*l.* for sewer reconstruction works; and St. Pancras Guardians, 2,400*l.* for poor law purposes. Sanction was also given to Westminster City Council to the borrowing of 1,136*l.* as contribution to cost of street improvement.

Tenders.—Several tenders for works for the Council were agreed to. They will be found on our Tender pages.

Cost of the Holborn to Strand Improvement.—In reply to a question, Lord Welby said that the gross expenditure on the Holborn to Strand Improvement up to December 31 last was 4,010,452*l.* As recoupment they had received 185,866*l.*, which left a net expenditure of 3,825,086*l.*

The Paris Fire.—In answer to Alderman Dew, Mr. Hemphill, the chairman of the Building Act Committee, said the Council was enabled to deal with factories established for the manufacture of dangerous articles, but not the storage of such articles as celluloid. Celluloid was concerned in the recent fatal fire in Paris, and also in the fatal fire in Queen Victoria-street. The only way was to deal with celluloid as they did with the storage of petroleum, but that would require either new legislation or action on the part of the Home Office.

Conditions as to Building on the Council's Land.—The report of the Corporate Property Committee contained the following paragraph:—

"The Council on December 1, 1903, amended condition No. 13 of the building conditions so as to include therein the following provision:—

"If, and so often as the same shall happen, any dispute shall arise after the plans and specifications have been approved between the Council and the lessee as to any matter connected with the erection of the said building or buildings, or the foundations or drainage thereof, or the preparation, laying out, fencing, or otherwise dealing with the said land, which matter is not provided for by 'the approved plans and specifications,' or any additions to, alterations in, or omissions from the same authorised as aforesaid, or by these conditions or conditions of approval every such dispute shall, if the parties do not agree, be decided by an arbitrator, appointed by the president of the Royal Institute of British Architects, whose decision shall be final.

"We then stated in our report that we did not ask the Council to fix the exact terms of the clause, as the drafting of the building conditions had been left in our hands.

"The clause as now drawn would only deal with disputes which might arise after the plans, etc., had been approved, and as it is necessary to make provision for the determination of disputes before this event, we propose that the exact wording shall be as follows:—

"If, and so often as the same shall happen, any dispute shall arise between the Council and the lessee as to any matter connected with the erection of the said building or buildings, or the foundations or drainage thereof, or the preparation, laying out, fencing or otherwise dealing with the said land, which matter is not provided for by 'the approved plans and specifications,' or any additions to, alterations in, or omissions from the same, authorised as aforesaid, or by these conditions, or conditions of approval, or as to whether any such matter is or is not so provided for, or as to the manner in which the same is provided for, every such dispute shall, if it arise before the plans and specifications have been approved, be decided by the architect, and if it arise thereafter be decided by an arbitrator to be appointed failing agreement by the president of the Royal Institute of British Architects, whose respective decisions shall be final."

Mr. White asked in what respect the proposal of the Committee differed from previous undesirable proposals?

Mr. Mullins, chairman of the Committee, said the proposal was made with the idea of giving effect to the previous decisions of the Council.

Mr. White said he should move that the paragraph be not received. According to the Committee's proposal, the Architect to the Council would still have power to impose his views, and there ought to be some appeal from the arbitrary decisions of any one man. It was desirable that the Council's land should be let as quickly as possible, and an appeal to an independent arbitrator after the plans had been agreed to was not of much advantage.

Mr. Lewis seconded. In his opinion the citizen of London was quite at the mercy of the Architect, who the Committee seemed to think was a transcendental genius, superior to all the other architects of London.

Mr. Howell J. Williams said that if the Committee's proposal was agreed to it would prevent people coming forward to take up the Council's surplus land, a large amount of which was to let.

Several other councillors having spoken to the same effect, the amendment was, on a show of hands, lost, and the report was adopted.

Proposed Shakespearian Memorial.—The Historical Records Committee recommended, in reference to the offer by Mr. R. Badger, of Eastbourne, that the letter of Mr. Badger with reference to the proposed erection of a memorial to Shakespeare in London be received with pleasure, and that his generous offer to give to the Council the sum of 500*l.* to defray the expenses of collecting funds for the memorial, and of 2,000*l.* upon trust as a contribution towards the fund, be accepted; that it be referred to the Historical Records and Buildings Committee to consider and report as to the nomination of trustees who would undertake to form a public committee, independent of the Council for the purpose of collecting subscriptions under the terms of Mr. Badger's gift of 500*l.*, so that the Council itself shall not be committed to collecting the required subscriptions; and that the Council is prepared to consider proposals for a site for the purpose of erecting thereon a memorial to Shakespeare, subject to it being satisfied that public subscriptions to a sufficient amount are forthcoming, and to its sanction being obtained to the form of the proposed memorial.

Mr. Cornwall suggested that, instead of passing a resolution in that form, the matter should be referred to a joint committee of the General Purposes and Historical Records Committee.

This was agreed to.

Traction Engines in Streets.—Mr. Beachcroft complained that the Public Control Committee had not reported on the question of controlling the passage of heavy locomotives through the streets. The Council had lost the opportunity of going to Parliament this year, and were continually licensing these engines of destruction.

Mr. Goddard Clarke said the Committee had drawn up by-laws on the matter, and had sent them to the Local Government Board for their approval. Until they heard from the Local Government Board they could do nothing in the matter.

Having transacted other business, the Council adjourned.

APPLICATIONS UNDER THE 1894 BUILDING ACT.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Clapham.—The retention of a greenhouse at Brooklands, Thurleigh-road, Clapham, abutting upon Ramsden-road (Mr. W. C. Poole for Mr. W. G. Allen).—Consent.

Dulwich.—Buildings on the site of Nos. 307, 309, and 311, Camberwell New-road, Camberwell (Mr. A. E. Mullins for Mrs. S. Melhuish).—Consent.

Islington, North.—A one-story motor-car building at No. 56, Crouch-hill, Islington, to abut upon Blythwood-road (Mr. F. L. Dove).—Consent.

Kensington, South.—Extension of a one-story building under the existing conservatory at Ellesmere House, Templeton-place, Earl's Court (Messrs. Leslie and Co., Ltd., for Mr. D. Vigo).—Consent.

Kensington, South.—Residential flats on the site of Nos. 34 to 44 (even numbers only), inclusive, Abingdon-villas, to abut also upon Allen-street, Kensington (Mr. S. Newcombe for Mr. W. J. Blow).—Consent.

Marylebone, West.—Residential flats, with bay windows, upon the site of Nos. 79 to 109 (odd numbers only), inclusive, Park-road, Regent's Park (Messrs. Runtz and Ford for Mr. M. Gluckstein).—Consent.

Paddington.—Retention of a balcony and three bay windows in front of No. 8, Lancaster-gate, Paddington (Mr. C. Sale for Mr. E. H. Hodgkinson).—Consent.

St. George, Hanover-square.—Retention of a projecting iron and glass pent roof over the area at the rear of Nos. 243, 245, 247, and 249, Regent-street, abutting upon Swallow-place (Messrs. Z. King and Son for Jays, Ltd.).—Consent.

Norwood.—Buildings upon a site abutting upon the north-east side of Milkwood-road and south-west side of Herne Hill-road (Mr. C. M. Quilter for Mr. S. Adams).—Refused.

St. Pancras, South.—An iron and glass pent in front of No. 131, Gower-street, St. Pancras (Mr. P. Young).—Refused.

Wandsworth.—Buildings upon the site of Nos. 17, 19, 21, 23, and 25, Balham-hill, Wandsworth (Messrs. Searle and Hayes for Messrs. J. Garrett and Sons).—Refused.

Wandsworth.†—The erection of a showcase upon part of the forecourt of No. 81, Clapham Park-road, Wandsworth (Mr. G. Garner for Mr. W. Whiteman).—Refused.

Width of Way.

Brixton.—The completion of a stable building on the north side of Melbourne-square, Brixton, with the forecourt fence at less than the prescribed distance from the centre of the roadway of the street (Mr. H. G. Assiter).—Consent.

Limehouse.—A one-story building adjoining No. 47, Repton-street, Limehouse, with external walls at less than the prescribed distance from the centre of the roadway of the street (Messrs. W. Stuttle and Son for Mr. G. Lloyd).—Consent.

Rotherhithe.—A one-story cart shed and stable at No. 8, Bermondsey-wall, Rotherhithe, with the forecourt fence at less than the prescribed distance from the centre of the roadway of the street (Mr. E. Crosse for Messrs. Puttock and Peacock).—Consent.

Line of Frontage and Space at Rear.

Hackney, North.—Deviation from the plans approved for the erection of a house on a site abutting upon the south side of Cazenove-road and west side of Geldestone-road, Hackney, with bay windows and porch and open space about such house so far as relates to the erection of a greenhouse at the premises (Mr. G. R. Woodruff).—Consent.

Hackney.—A summer-house and tool cupboard in front of No. 130, Cazenove-road, Hackney (Mr. G. R. Woodruff).—Refused.

Width of Way and Lines of Frontage.

Lewisham.—An addition at the rear of No. 21, West-hill, Sydenham, to abut upon Amberley-road (Messrs. J. Dennett and Co. for Mr. R. B. Beeton).—Consent.

St. George, Hanover-square.—That the application of Messrs. Woodrow and Helsdon for an extension of the period within which the erection of a one-story lavatory addition to the Grosvenor Hall, Buckingham Palace-road, St. George, Hanover-square, with external walls at less than the prescribed distance from the centre of the roadway of Flask-lane was required to be commenced, be granted.—Agreed.

Width of Way, Lines of Frontage, and Construction.

Hackney, Central—A wood and iron building of a temporary character at the Duke of Wellington public-house, Morning-lane, Hackney, to abut upon Chatham-place (Messrs. Snewin Brothers and Co. for Messrs. Holt and Co.).—Consent.

Brixton.—A wood, iron, and glass building at the rear of No. 28, Coldharbour-lane, Brixton, to abut upon Crawford-street (Mr. G. Turner).—Refused.

Width of Way, Line of Frontage, and Space at Rear.

Woolwich.—That the application of Mr. H. P. Monckton, for an extension of the period within which the rebuilding of Nos. 2, 3, and 4, Frances-street, Hill-street, Woolwich, was required to be completed, be granted.—Agreed.

Formation of Streets.

Greenwich.—That an order be issued to Mr. A. Mitchell Torrance, sanctioning the formation or laying out of new streets for carriage traffic upon the Kidbrooke Lodge estate to lead from St. Germain's-place to Kidbrooke-grove, Greenwich (for Sir John McDougall).—Agreed.

Woolwich.—A deviation from the plans sanctioned for the formation of new streets upon the Eltham Park estate, High-street, Eltham, so far as relates to an alteration in the gradient of Dairsie-road (Mr. R. Stewart for Mr. A. Cameron Corbett, M.P.).—Consent.

Wandsworth.—That an order be issued to Messrs. F. W. and E. Lucas and H. Erichsen, refusing to sanction the formation or laying out of new streets for carriage traffic out of the western side of Tooting Bec-road, Upper Tooting.—Refused.

Space at Rear and Means of Escape at Top of High Buildings.

Chelsea.—A deviation from the plans approved for the erection of a building to abut on Sloane-gardens, Sloane-square, and Lower Sloane-street, Chelsea, so far as relates to the erection of such buildings as shown upon the plan, dated January 30, 1904 (Mr. E. W. Mountford and Mr. A. F. Faulkner for Mr. W. Willett). That Mr. E. W. Mountford and Mr. A. F. Faulkner be informed that the Council has considered the plans showing the means of escape in case of fire proposed to be provided on the fifth and sixth stories of a building to abut on Sloane-gardens, Sloane-square and Lower Sloane-street, Chelsea, and that the Council will issue a certificate under the section.—Agreed.

Space at Rear.

Chelsea.—A modification of the provisions of section 41 with regard to open spaces about buildings, so far as relates to the proposed erection of buildings on a site abutting upon the north-west side of Basil-street and east side of New-street, Chelsea, with open spaces about such buildings (Mr. R. Bennett).—Consent.

Rotherhithe.—A modification of the provisions of section 41 with regard to open spaces about buildings, so far as relates to the proposed erection of an addition at the rear of No. 6, St. Helena-road, Rotherhithe, with an irregular open space at the rear of the premises (Mr. H. A. Vohmann).—Consent.

Wandsworth.—Two buildings on the north-west side of High-street, Tooting, westward of Selkirk-road (Mr. D. Watney for Messrs. Attlee).—Consent.

Paddington, South.—A modification of the provisions of section 41 with regard to open spaces about buildings, so far as relates to the proposed erection of an addition at the rear of No. 114, Westbourne-grove, Paddington (Mr. G. A. Sexton for Mr. A. Woollard).—Refused.

Strand.—A modification of the provisions of section 41 with regard to open spaces about buildings, so far as relates to the proposed erection of an addition at the rear of No. 17, Charles-street, Haymarket (Messrs. Treadwell and Martin for Messrs. W. Dunstan and W. J. Styles).—Refused.

Westminster.—An additional story to Nos. 1 and 2, William-street, Knightsbridge (Mr. S. Skrimshire for Mr. H. Gilbert).—Refused.

Dwelling-houses on Low-lying Land.

Deptford.—That a licence be granted to Mr. A. E. Gould for the erection of five dwelling-houses on low-lying land, situated on the south side of Hornshay-street, Deptford, in accordance with the plan of Mr. A. Blackford on his behalf.—Agreed.

The recommendations marked † are contrary to the views of the local authority.

THE ARCHITECTURAL ASSOCIATION DISCUSSION SECTION:

THE LEGAL POSITION OF AN ARCHITECT.

THE Discussion Section of the Association held the eighth meeting of the session on the 17th inst., when Mr. Walter C. Williams, solicitor, read a paper on "The Legal Position of an Architect."

Mr. Williams, in introducing the subject, confessed to finding some little difficulty as to a fitting definition of an architect, for auctioneers' clerks, and unsuccessful builders "prepared plans"; he, therefore, asked for latitude in the use he made of the word at a time when the price of a brass plate and the effrontery to stick it up were all the apparent requisites to a man calling himself an architect. Duties, with the attendant liabilities as to their breach, were then dealt with, and it was shown how the displeasure of the law might be incurred if due skill were not used in the preparation of plans or due vigilance exercised if their carrying out had to be superintended. In France an architect had been held criminally responsible for the death of a man killed by the fall of a building owing to defective design, and although we had not got to that it was conceivable that even in England circumstances might arise under which an architect might be found guilty of manslaughter. The liabilities of the architect in his capacity as agent of the employer under contract were next taken—his position in relation to the builder, his authority for taking out quantities or having them taken out, and as to their accuracy; the considerations governing extras, omissions, and variations; certificates, especially the issue of the final certificate, where his capacity is that of an arbitrator; and cases were cited and their salient points brought out:—Moon *v.* Witney Union Guardians, Restall *v.* Nye, Waghorn *v.* Wimbledon Local Board, Randall *v.* Trimen, Ford *v.* Bemrose, Thorn *v.* Lord Mayor of London, Rex *v.* Peto, Chambers *v.* Goldthorp, Kemp *v.* Rose, etc.

Turning to rights, although the architect, like any other man, was entitled to be paid a reasonable remuneration for work done, yet it could not be said that he had any special or definite rights *qua* architect. He had not the ascertained position of the solicitor, whose fees are fixed by statute, nor even of the medical practitioner; he could only recover on a *quantum meruit*, the 5 per cent. being but a delusion, for although that rate may be, and is, accepted as a reasonable basis of remuneration, it is open to the other side, to show that it is not so, and the architect must accept the amount awarded by the court. This, of course, would only apply in the absence of an express agreement for payment, whether verbal or in writing. But if the contract be to do something that is not to be completed within twelve months of date of contract, then it must be in writing or there is no recovery; and in this connexion the efficacy of the sixpenny stamp was strongly emphasised. If dealing with a corporation, i.e., a limited company, municipal council, or board of guardians, the absolute necessity for the contract being under the common seal of the corporation was referred to. A letter from secretary or manager, or even a resolution entered on the minutes, would not suffice. However, comforting exceptions to this were vouchsafed. The counsel of perfection—in law the only counsel—was given as to taking instructions from client, doing sketch plans, and so on (cases referred to: Lawford *v.* Billericay, Billericay *Board of Guardians*, Moffat *v.* Dickson), and as to obtaining fees on account, if not beforehand.

With reference to the ownership of plans, the case of Ebdy *v.* Gowan decided that where an architect was instructed merely to prepare plans or designs, on payment of fees they belonged to the employer, but where plans were prepared for works to be carried out under the

architect's superintendence the law was not so clear.

In the discussion which followed—opened by Mr. F. G. W. Buss, and sustained by Messrs. W. Trant Brown, Louis Ambler, Theodore Fyfe, A. H. Belcher, Max Clarke, and the Chairman, Mr. J. H. Pearson—the terror of the law, as so clearly expounded by Mr. Williams *as* law, was fortunately somewhat dissipated and equanimity of mind in part restored. An instance was given wherein a local board had actually been overcome by nothing stronger than moral pressure—"bluff" in fact—and the fees paid up in full, though the commission had not been under the common seal of the august body concerned. But it was not safe to presume, and there was a concensus of opinion that prevention was better than cure. For estimates ought not to be exceeded, neither should there be any ambiguity as to fees and the manner of their payment. If ordinary business methods were but adopted, and the R.I.B.A. scale of charges duly placed before the prospective client, all would go well. Too great a nicety in such delicate matters at the initial stage was not to be indulged in. In practice an architect could usually have extras carried out up to a limit without complications arising, and, occasionally with larger amounts, if the client were kept informed on the various matters as they arose. The approving or otherwise of building materials ought to be reserved wholly to the architect, for he ought to know his materials and see that they were good. In this connexion the form of contract as drawn up by the R.I.B.A. was thought to be open to some improvement. Some sympathy was manifested towards the unfortunate builder, who, to the call of an all too exacting employer, perchance was obliged to execute certain works according to contract, even though great unforeseen outlay, with attendant loss, should have to be incurred in their literal performance. Nor was the architect always able, in the proper discharge of his duties as defined by the contract, to indulge his feelings of justice as towards the builder.

THE ARCHITECTURAL ASSOCIATION SPRING VISITS.

III.—CHURCH OF HOLY TRINITY AND ROYAL COLLEGE OF SCIENCE, SOUTH KENSINGTON.

SOUTH KENSINGTON was once again selected as the district for the third visit by the Architectural Association on Saturday, February 20, when, in addition to the large Government works in progress which have been inspected in previous years, a special interest was provided by the inclusion of the Church of the Holy Trinity in the programme for the afternoon's work.

Mr. G. F. Bodley, R.A., the architect of the church, kindly met a large party of members, including the President, Mr. H. T. Hare, and gave much useful and valuable information, which added materially to the success of the visit. The church when completed will seat about 1,500 people, disposed in the nave, the east aisle, and the double west aisles. Services were commenced in October last, when the work was finished with the exception of the double aisles, and consequently a temporary brick wall had to be erected on the west side of the nave. Owing to the limits of the site, Mr. Bodley found it necessary to depart from the usual orientation and to substitute a north and south axis. The entrance from the new road on the south is placed on the extreme boundary line in order to gain the maximum internal length; no porch or lobby is provided.

The internal length is 112 ft.; the approximate width of the nave is 28 ft., the height of which to the ridge is 60 ft. To add to the appearance of length a rise of about 12 in. in the floor from south to north has been ingeniously contrived, and, to a great extent, produces the desired effect. The sources of all daylight are practically from the two large north and south traceried windows, the former of which has a very long uninterrupted centre light. Two smaller side windows in the chancel light up the altar and dossal. For evening use and for dull days electric lighting is employed, but it is noteworthy that, as far as possible, it has been the architect's endeavour to conceal both the natural and artificial lighting from the eyes of the worshippers, with marked success.

It is readily seen that large internal effects have been striven for; to assist this effect no chancel arch or step is provided, no change in width is introduced in the sanctuary, and nothing in the roof marks the position of the choir. The nave arcades consist of slender cluster shafts carrying arches, which recall all that is best of XIVth century English work. The roof is in the form of a plain, straight-boarded vault relieved by heavy wooden ribs springing from small shafts rising from the main piers. These ribs were originally intended to be built in stone, but owing to the lack of abutment caused by the absence of the flying buttresses of the double aisles, timber had to be employed. Both the nave roof and that spanning the small east aisle have been finished throughout with charming painted colour decoration.

Money not being too plentiful, economy had to be borne in mind. The external and internal walls are faced with Box Ground Bath stone; the roofs are covered with tiles; the chancel floor and main passages are paved with black and white Belgian marbles laid in large scaled designs, finished with a high polish, and the flooring under the chairs which provide for the seating accommodation is of wood blocks laid square.

Few internal permanent fittings are as yet in position. The organ (without its case) is approached by a spiral iron staircase enclosed in an oak panelled casing. Some fine designs for stained glass, organ loft, and chancel screen were hanging on the walls, which conveyed an idea of the ultimate effects which, together with the large amount of colour decoration anticipated and the completion of the double aisles, will make this church not the least striking and beautiful of the many fabrics for which Mr. Bodley is the author. Messrs. Stevens and Bastow, of Bristol, have built the church in an admirable manner. The hot air system of heating has been carried out by Messrs. Hayden. No effort has, however, been made properly to ventilate the interior, the small provision made being quite mediæval in its nature and extent.

The party then visited the Royal College of Science new buildings in Imperial Institute-road. In the absence of the architect, Mr. Aston Webb, R.A., the visitors were received by Mr. Peacock, clerk of works, who, in addition to conducting them over this enormous undertaking, had very thoughtfully set up plans and details in the various parts of the buildings to which they had reference.

A previous visit was made last year, and we gave a detailed account of the ventilation and other matters in our issue of February 22, 1903. In the interval which has elapsed considerable progress has been made by the contractors, Messrs. Leslie and Co. From a height of some 15 ft. to 20 ft. the walls have since reached to their full height and the whole of the buildings are roofed in. The large ventilating scheme in the hands of Messrs. Ashwell and Nesbit is now being hurried forward, the main hot and cold air ducts, with hollow divisions constructed with Picking's partition bricks, were in an interesting state for inspection. The Delabole rag slating is nearly completed, whilst to the interior a considerable amount of faience dressing, made by Messrs. Whitehead of Leeds, is fixed. Many of the corridors to the upper floors have plastered vaulted ceilings; the roofs of some of the physical laboratories are similarly finished and have good effects.

The buildings throughout are full of small matters of detail necessary to the purpose to which they are ultimately to be applied, and we cannot here attempt a description of even a few of them. Although the main front is yet hidden by a forest of scaffolding, it is safe to assume that when finished these buildings, which are eventually to become the headquarters of British scientific research, will have a position second to none in the educational institutions of the world.

LEEDS INSTITUTE.—The students attending the building construction classes held at the Leeds Institute visited last Saturday the Leeds market hall and shops now in course of completion, from the designs of Messrs. Leeming and Leeming. The whole of the buildings were thrown open to the students, who were thus enabled to see the work in a partially finished state and to advantage. Details of construction were explained by Mr. James Neill (the teacher of the classes) in conjunction with the working drawings, which were also on view. There are 172 students in the building construction classes at the Institute, and during the latter half of the session visits are undertaken to buildings in course of erection in the city with a view of imparting practical knowledge.

ARCHITECTURAL SOCIETIES.

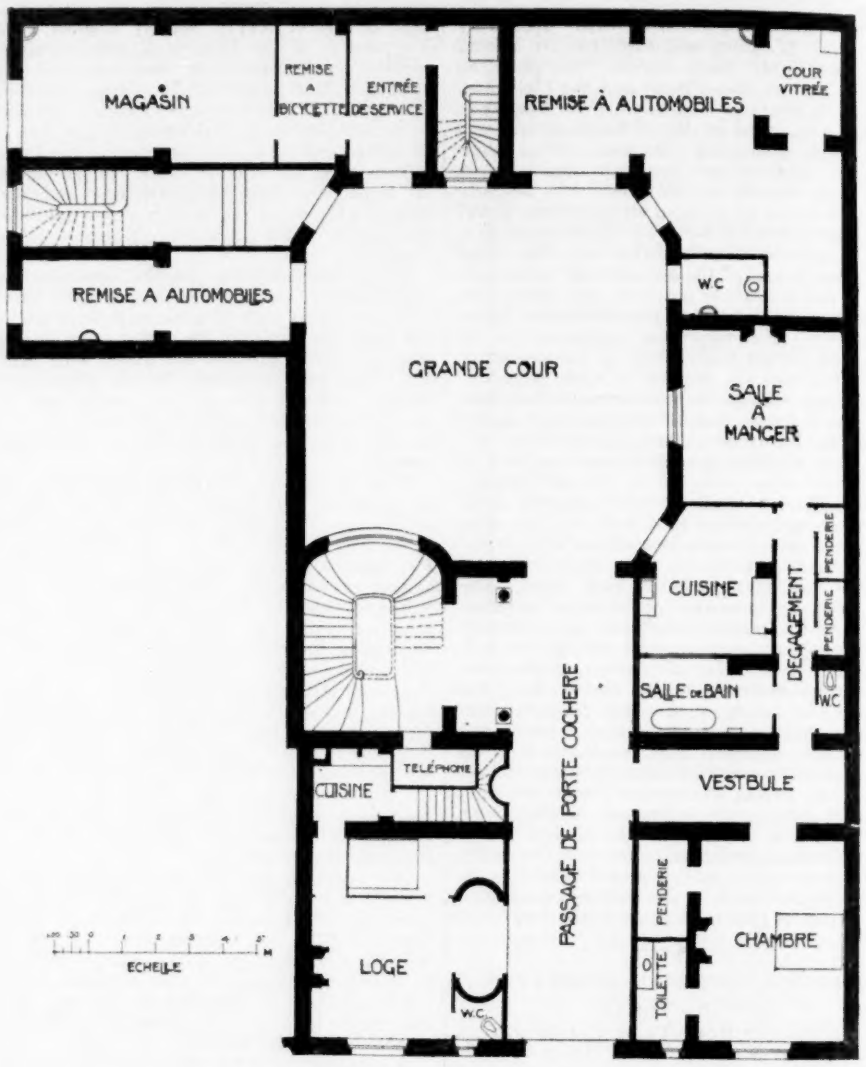
EDINBURGH ARCHITECTURAL ASSOCIATION.—A meeting of the Edinburgh Architectural Association was held on the 17th inst. at No. 11, George-street, Mr. A. Hunter Crawford, President, in the chair, when Mr. Robert H. Pow, C.E., read a paper on "The Strength of Scaffolding. After referring to some opinions regarding the force of the wind, and factors of safety, he dealt with the subject of scaffoldings for steam cranes, and pointed out the weaknesses arising from imperfect general bracing and the dependence on girder connections between the towers. He alluded to the unsatisfactory stiffening secured by the use of cross girders, and stated that he preferred in all directions some form of bracing, the strength of which could be calculated. The lecture was illustrated with diagrams and models.

DEVON AND EXETER ARCHITECTURAL SOCIETY.—At a meeting on Tuesday, the 16th inst., Mr. Mowbray A. Green read a paper on "The XVIIIth Century Architecture of Bath," illustrated by lantern slides. He said that in the XVIth century Bath was but a small city and mostly contained within its ancient walls, which surrounded it roughly in the form of a circle of about 1,200 ft. diameter. A century passed before the use of the mineral water brought the city into repute, but about 1680 much was done to improve the buildings, and the visit of Queen Anne and the Prince of Denmark in 1702 and 1703 caused a large influx of visitors. During the first twenty years of the century Trim-street, Broad-street, Green-street, part of Chapel-court, Westgate-street, St. James's-street South, and part of Orange-grove were rebuilt, some of them being without the city walls. Widcombe House also belongs to this period (1727). It was now that the elder John Wood came to Bath and embarked upon large building schemes, such as St. John's Hospital, Chandos-buildings, and Allen's Town House, while John Strahan, of Bristol, laid out Kingsmead-street, Avon-street, and Beaufort-buildings. In 1728 Wood began Queen-square and Gay-street on the north-west of the city, some of his best work being found here. Prior Park, that magnificent mansion on the northern slopes of Combe Down, followed in 1735, the North and South Parades on the site of the old Abbey Orchard in 1740-43, and several villas in the neighbourhood of the city, chiefly Belcombe Brook at Bradford-on-Avon in 1734 and Titan Barron Loggia at Bathford, 1748. The original plans and contract for the latter are extant and are of extreme interest as showing how the specifications were incorporated with the plans, the description of the carrying-out of each room being written on the plan within the walls of that room. The mineral water hospital was begun in 1738, and the Circus in 1754, the latter being the design of the elder Wood, though carried out by his son, who ably followed his father's work, and who in 1767 began the Crescent which was completed about eight years afterwards. It is not unlikely that Queen-square, Gay-square, the Circus, and the Crescent were all part of a great scheme which the elder Wood had contemplated before his death in 1754. In 1769 the younger Wood began the Assembly Rooms, an exceptionally well-planned suite of rooms costing 20,000*l*., a sum of money which would not cover much more than one-third of the cost of such a building at the present day. Alfred-street, Princes-buildings, and York-buildings were also the work of Wood, who died at Batheaston in 1781. Of the buildings which belong to the latter part of the century, Milson-street, begun about 1760, was probably the work of Robert Lightholder, who built the Octagon Chapel there in 1767. The Town Hall and markets were the work of Thomas Baldwin in 1775, the banqueting hall being, if anything, finer than the ball-room in the Assembly Rooms. In the last two decades of the century Baldwin built largely on the Pulteney estate on the other side of the river, and was also concerned with much of the design for the new pump-room, the northern colonnade and the façade of the King's Bath having been erected by him in 1786 and 1788 respectively. He was employed in Cheap-street, Bath-street, where the front wall of the houses has a colonnade under, and the Cross Bath, and in other improvements consequent upon the City Act of 1789. Towards the end of the century building had increased enormously, and among the numerous architects and builders John Palmer is most conspicuous, he having designed St. James's-square, Lansdown-crescent,

and many other buildings, while his façade to Kensington Chapel in 1794 is one of his best works. Generally speaking, the styles of the century may be divided into three groups—that of the first twenty-five years, when the houses had gabled roofs and façades with large sash windows surrounded by bolection mouldings, and when the interiors were panelled in wood almost throughout and the rooms small and comfortable; the next fifty years, when the work was modelled upon the strictly classic Palladian manner with rusticated basements, two stoned orders, a crowning cornice and parapets, with Mansard roofs, while the interiors become spacious and dignified and plaster work was brought into general use; and the last twenty-five years when the free manner of Robert Adam came into vogue and the strong methods of the earlier work gave way to detailed and abundant decoration.

ARCHÆOLOGICAL SOCIETIES.

BRITISH ARCHÆOLOGICAL ASSOCIATION.—The fourth meeting of the session was held on the 17th inst. at 32, Sackville-street, Piccadilly, Mr. C. H. Compton, J.P., in the chair. Mr. I. Chalkley Gould exhibited a plan of the 48 acres of land recently presented by the Duke of Norfolk to the City of Sheffield, and congratulated the Association on its petition to the Duke, which, associated with a similar petition from the Free Libraries and Museums Committee, had secured the important earthworks on Wincobank from the destruction which threatened them. The Duke, in giving the land for a park, had expressed his wish that the ancient camp thereon should be preserved in accordance with the suggestions made in the above petitions.—Mr. W. J. Nichols then read a paper dealing with "The Chislehurst Caves and Dene-holes" and the results of a further study of them since the reading of his first paper upon this subject before the Congress at Sheffield last year. Recently a very careful survey of these caves had been made by experienced mining engineers, and an accurate plan of the workings already cleared out has been made, and was exhibited to illustrate the paper. Mr. Nichols considers that the result of these careful studies goes a long way towards proving that these chalk galleries have been the work of successive ages. The earliest are those which, by way of distinction from the outer and inner series of workings, are now known as the middle series; and, as these are immediately connected with the dene-holes, they are, in his opinion, of Celtic origin, and bear the impress of a people advanced in art. The width of the galleries varies, but may be taken at an average of 9 ft., narrowing so considerably towards the roof as to give them the appearance of an arcade. One thing of importance has been proved by the plan—viz., that most of the principal passages of this great labyrinth converge at the well chamber, showing that the excavations were carried out on a systematically conceived plan, and were the work of competent men. The outer series of galleries, Mr. Nichols thinks, may be Roman; here the passages run in straight lines, and at right angles, and are wider and less carefully finished than those of the middle series. The walls, however, are not in the same condition as originally formed, a later people, perhaps so late as the XVIIIth century, having cut and hacked them so far as the pick would reach until, in most places, all semblance of their original form has been lost. From these outer workings the Romans doubtless derived vast quantities of chalk needed for conversion into lime, cement, or mortar for use in the construction of their great works of fortification, public buildings, embankments, etc., and road-making in London and Southwark. The ancient trackway, which ran from the head of the camp at Chislehurst and passed through Elmstead Wood and Blackheath to Watling-street at Deptford would afford facility of transport to the barges at Deptford, whence the city would easily be reached.—Mr. R. H. Forster followed with a paper upon the same subject, which was illustrated by plans and sections prepared from the survey made by Mr. T. E. Forster quite recently. He said these caves are extensive for chalk workings, but the part surveyed covers less than 20 acres. They are chalk mines, and bear a strong resemblance to old coal workings near Newcastle, especially in the careful dressing of the walls in some parts. In the middle mine the system followed has been that of removing the upper chalk first, leaving a "bottom canch" to be worked later; in the outer and inner mines the lower chalk was first worked, leaving a "top canch," which was brought down afterwards. The "altar-tables" are pieces of the "bottom canch" which have not been removed. The "dene-hole chambers" are places where the "top canch" has not been "dropped." The beehive shape of the recesses is the natural result of mining operations. The "well" was possibly a shaft sunk to test the depth and quality of the lower chalk, and may have been first used as a well in connexion with the underground garden. The outer and inner mines are in their original state, and there is no reason to think that their pillars have been stripped. The supposed dene-holes are falls of the roof caused by mining. The three mines are of about the same date; the narrow connecting passages have been driven from the middle mine to prove the position of the others. This and other points show a knowledge of surveying which precludes an early date. The only clue to the age of the mines is their resemblance to old workings near Newcastle, probably about 200 years old. Some of the chalk may have been sold for ballast, an immense quantity being required by ships bringing North Country coal. Much would also be used for lime burning both at Chislehurst and beside the Thames. There are no certain traces of dene-holes in this part of Chislehurst, and dene-holes generally were probably chalk mines, an explanation which had been rejected on insufficient grounds. The Essex dene-holes supply the connecting link between the bell pit and the galleried mine. Open quarrying is not necessarily easier or cheaper than mining, and surface chalk is not so good for agricultural purposes. The amount of chalk used in the course of many centuries for various purposes is quite enough to account for all the excavations in Kent and Essex. Although Mr. Forster differed from Mr. Nichols in his views regarding the great antiquity of these caves, he said the subject was one of very great interest, as very little was known of the archæology of mines and mining. Mr. Nichols, having been obliged to leave before the conclusion of the paper, was unable to take part in an interesting discussion which followed. Before the meeting separated, the Hon. Secretary, Mr. Patrick, announced that, by invitation of the Mayor and Corporation of Bath, the Congress this year would be held in that city, probably from August 8 to 13.



House, Rue Fabert, Paris. Plan of Ground Floor.

Illustrations.

DESIGN FOR A CRESCENT.

THIS is the design sent in competition for the Tite prize at the Institute this year, under the motto "Red Shield," and which Mr. Phené Spiers, in a letter in our columns at the time, maintained had been most unjustly or carelessly passed over, and ought to have had the prize. We do not know that we should go so far with Mr. Spiers as to say that positively, but we certainly think that it ran the prize very close, and that, at all events, it should have had the second place. We are, therefore, very glad to do justice to the ability shown in the design by publishing it, in spite of the unaccountable neglect of the Committee of Selection.

The author is Mr. Robert Atkinson, of Nottingham.

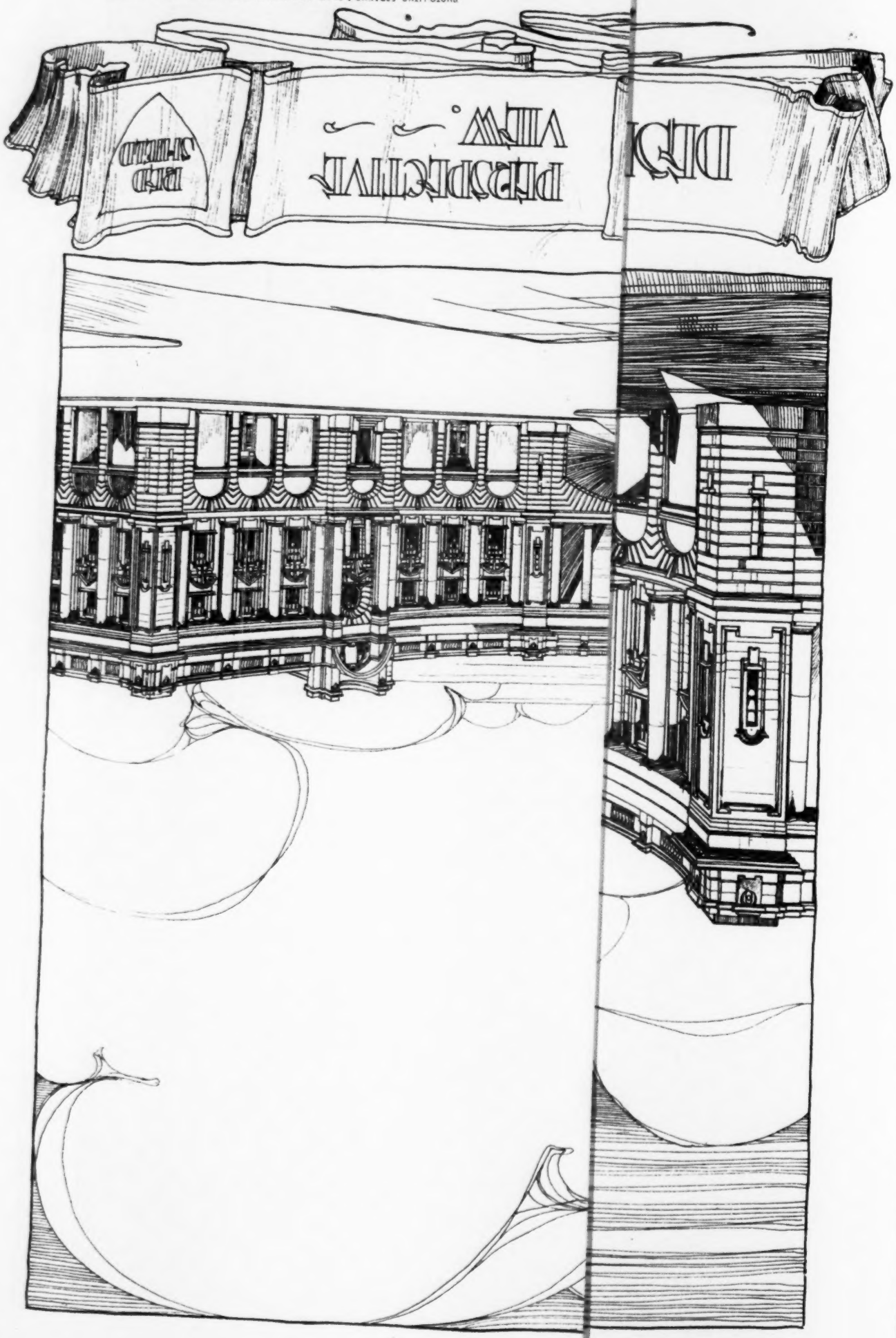
PREMIATED FAÇADES, PARIS FAÇADE COMPETITION.

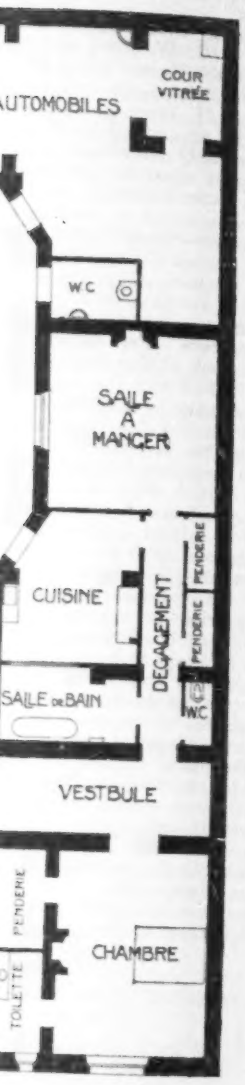
WE give illustrations of two of the new street façades in Paris which have received premiums in the annual competition for awards for the best executed fronts of new buildings which has been established in Paris.

The character of the two designs shows clearly that there is no intention on the part of the authorities of promoting any special school or style of architecture. That by M. Nénot, the eminent architect of the new Sorbonne, is a severe and restrained design on academical lines. The illustration is taken from a photograph.

The other design, by M. Hodanger (a name

PHOTO-LITHO SPRAGUE & Co. LTD 448 EAST HARDING STREET FLEET LANE E.C.





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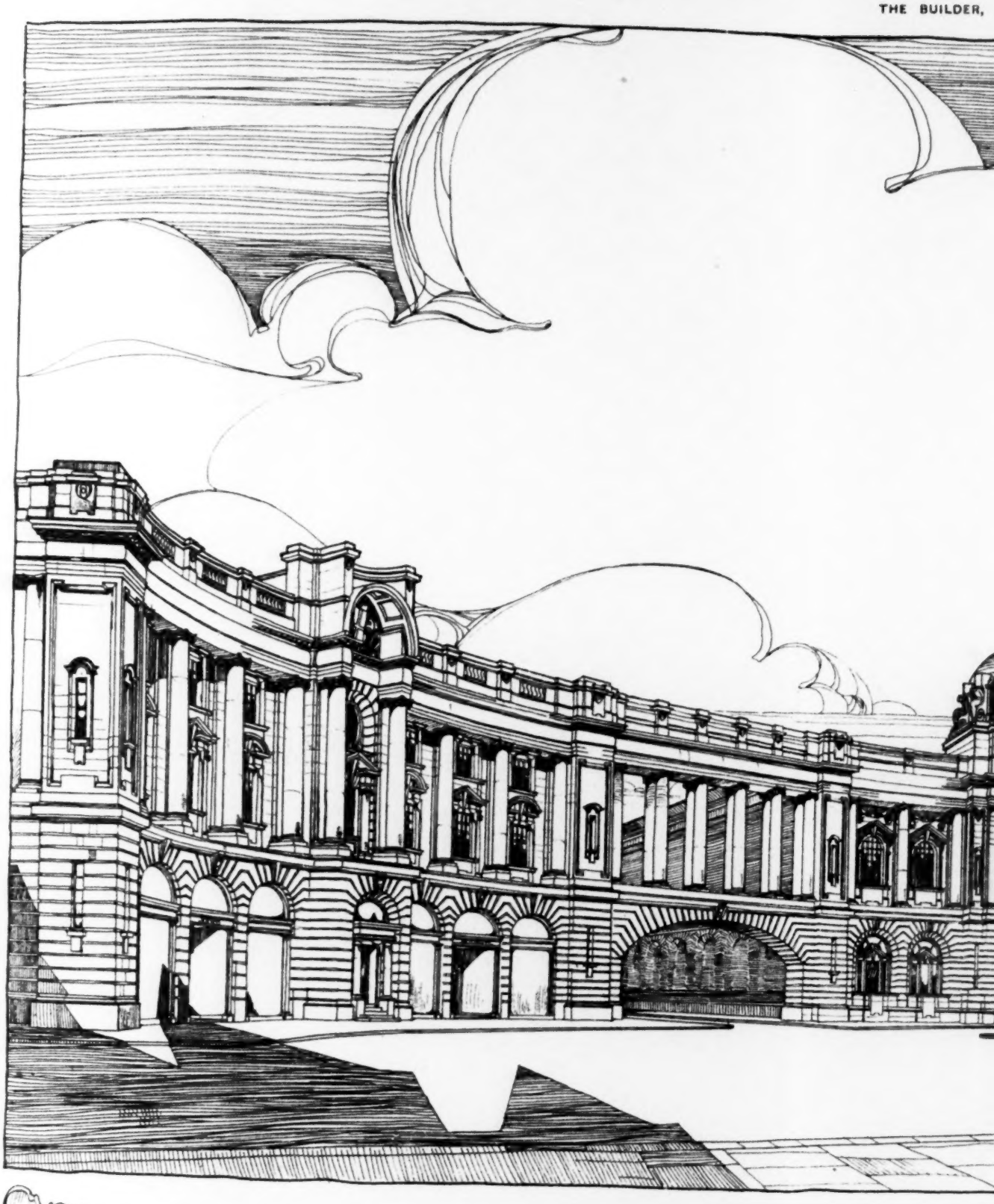


DESIGN FOR A CRESCENT IN A LA

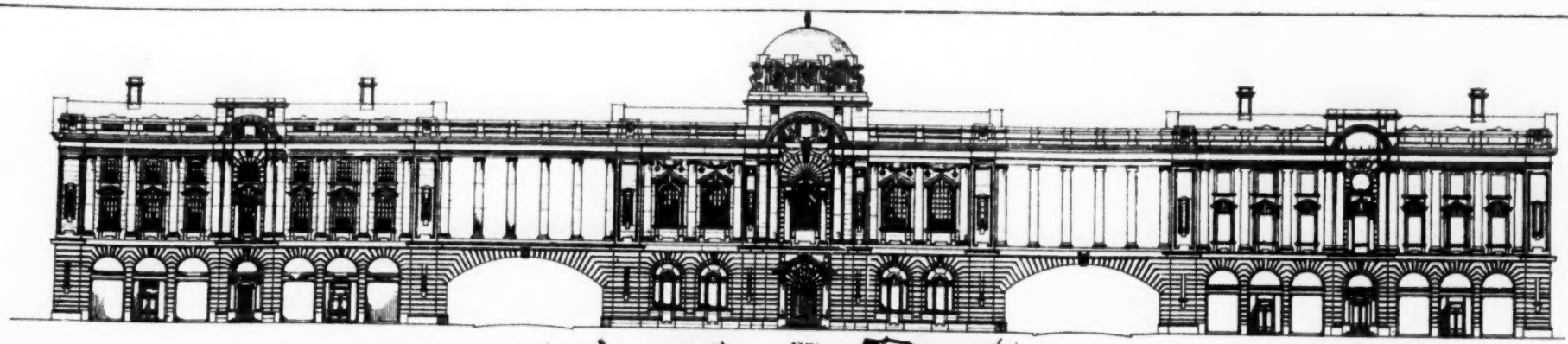
DESIGN FOR A CRESCENT.—

SUBMITTED IN COMPETITION FOR THE TITL

PHOTO LITHO. SPRAGUE & Co. LTD. 4 & 5 EAST HARDING STREET, FETTER LANE, E.C.

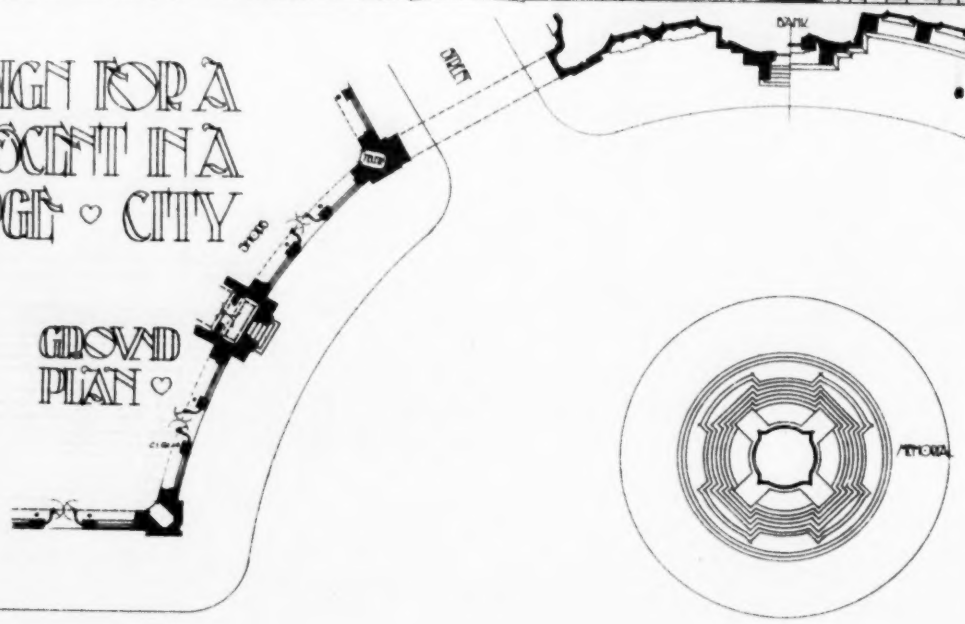
CRESCENT.—By Mr. Robert Atkinson.

FOR THE TITE PRIZE (INSTITUTE OF ARCHITECTS).

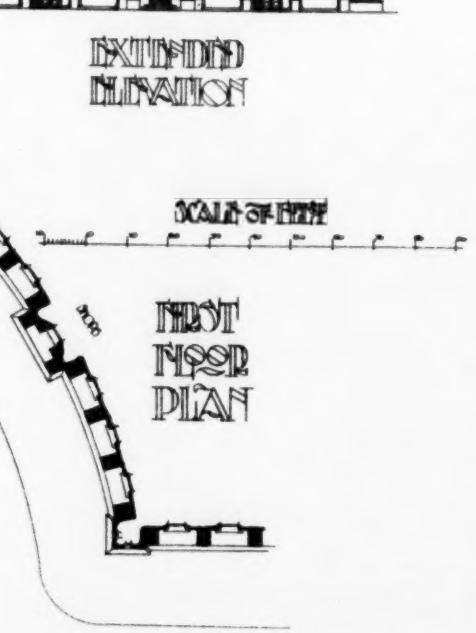


DESIGN FOR A CRESCENT IN A LARGE CITY

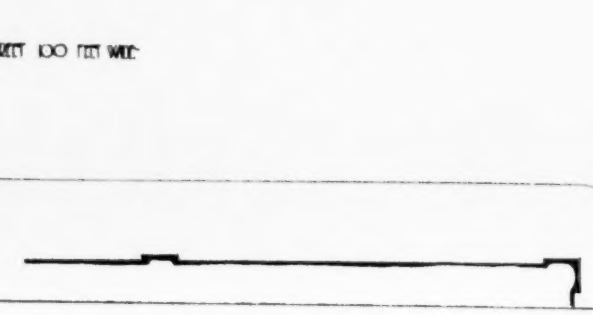
EXTENDED ELEVATION



GROUND PLAN



FIRST FLOOR PLAN



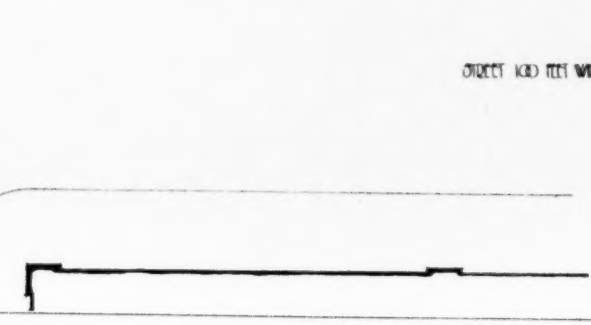
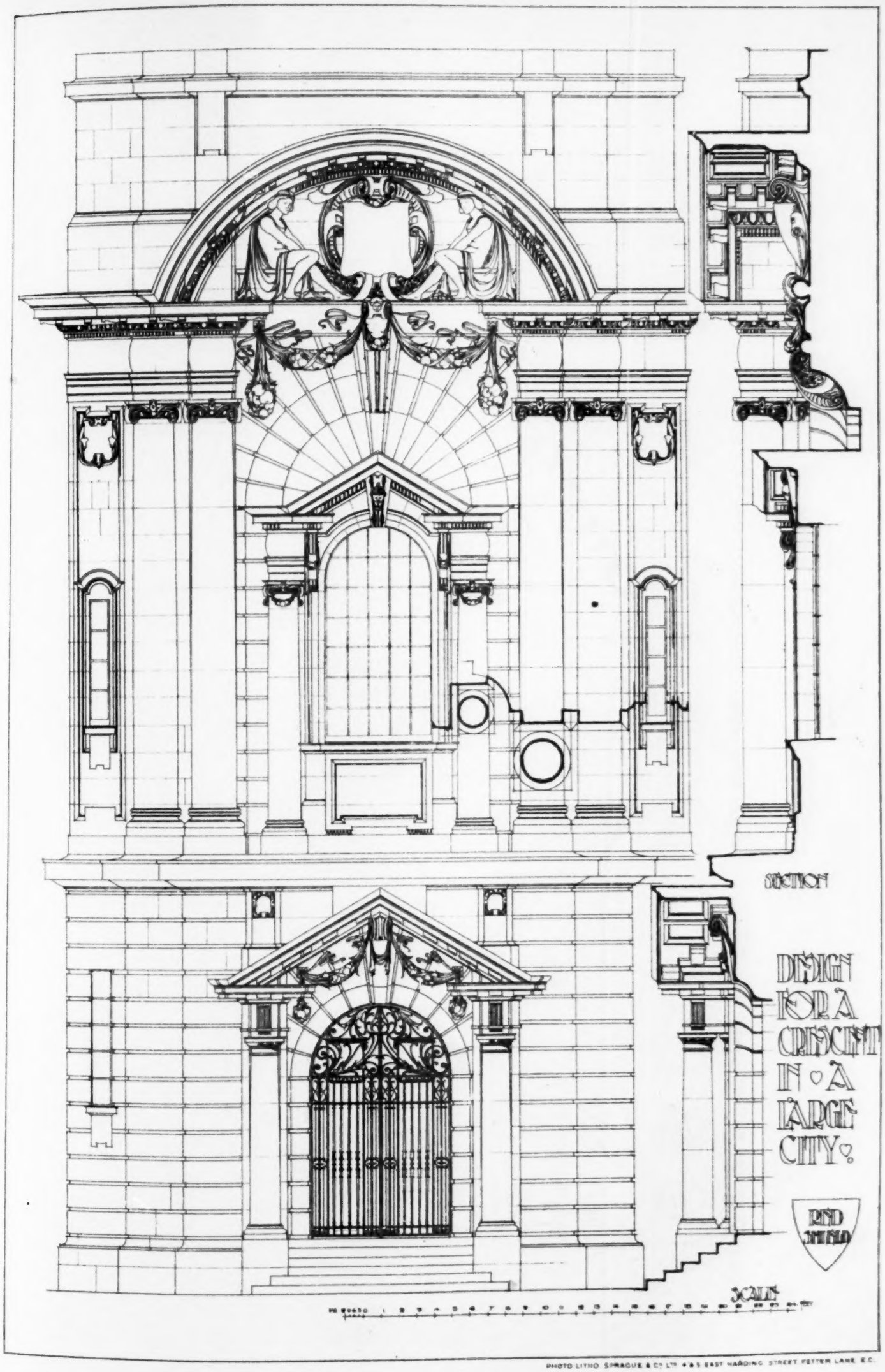


PHOTO-LITHO SPRAGUE & CO. LTD. 44 & 45 EAST HARDING STREET FETTER LANE E.C.

DESIGN FOR A CRESCENT.—By Mr. Robert Atkinson

SUBMITTED IN COMPETITION FOR THE TITE PRIZE (INSTITUTE OF ARCHITECTS).


SECTION
DESIGN FOR A CRESCENT IN A LARGE CITY.
RIBA MEDAL
SCALE
PHOTO LITHO SPRAGUE & Co LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

DESIGN FOR A CRESCENT.—By Mr. Robert Atkinson.

SUBMITTED IN COMPETITION FOR THE TITE PRIZE (INSTITUTE OF ARCHITECTS).

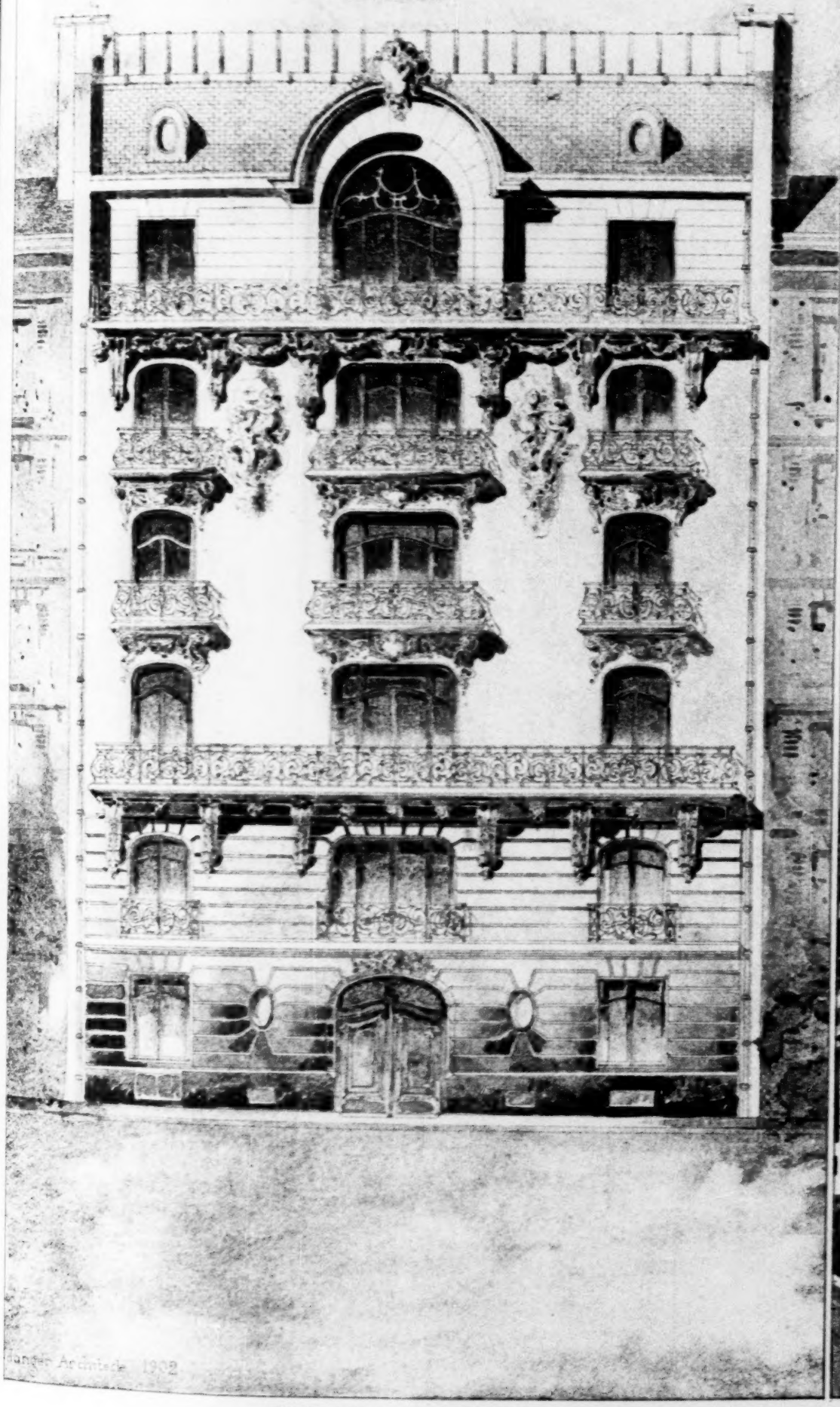
HOTEL, RUE LAFITTE.

M. [illegible]NÉNOT, ARCHITECT.

PROPRIETE DE M^r CONSTANT

MAISON DE RAPPORT

38^{bis} Rue Fabert



HOUSE FRONT, RUE FABERT.

M. MAURICE HODANGER, ARCHITECT.

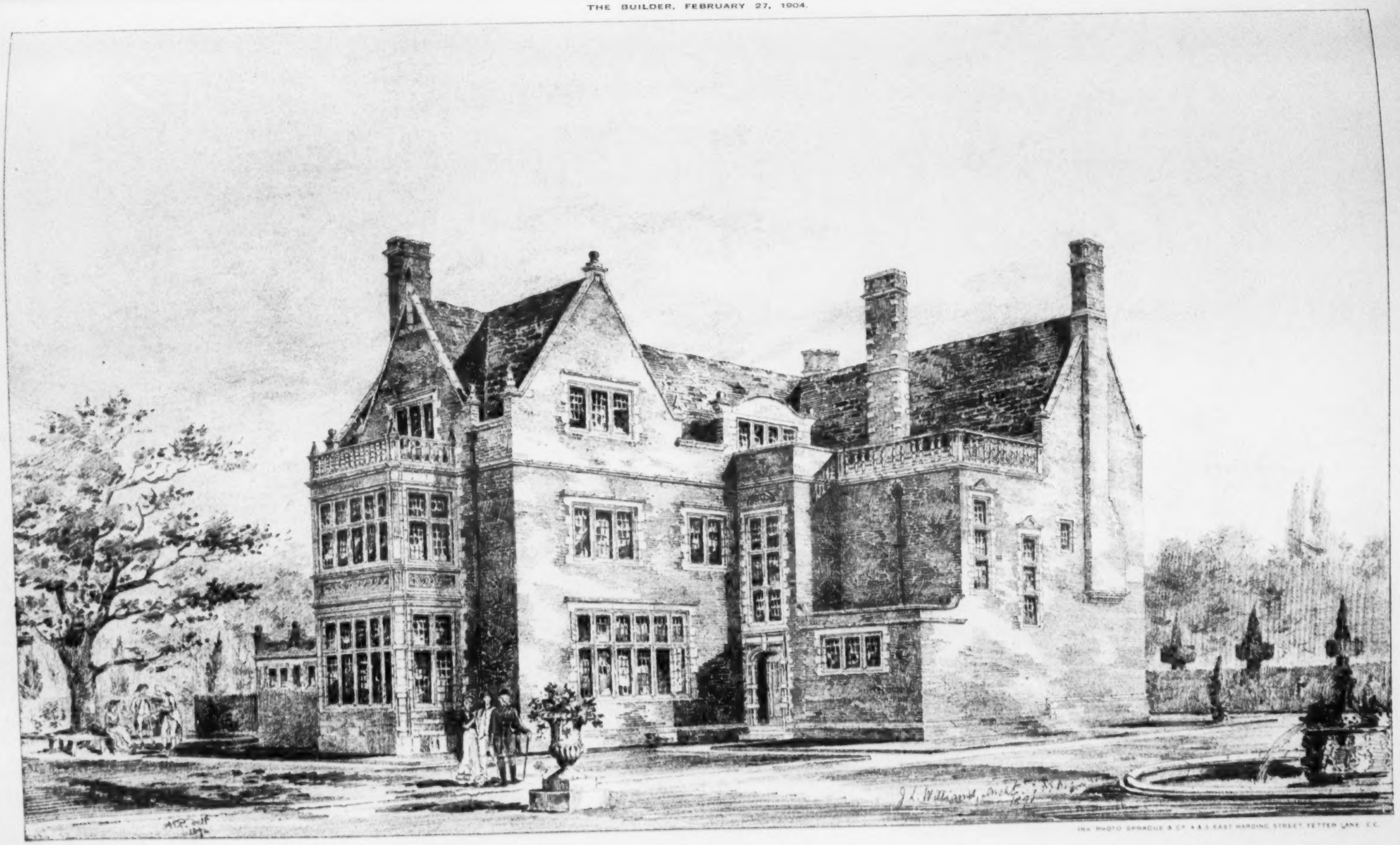
FAÇADE, RUE LAFITTE.

M. NÉNOT, ARCHITECT.

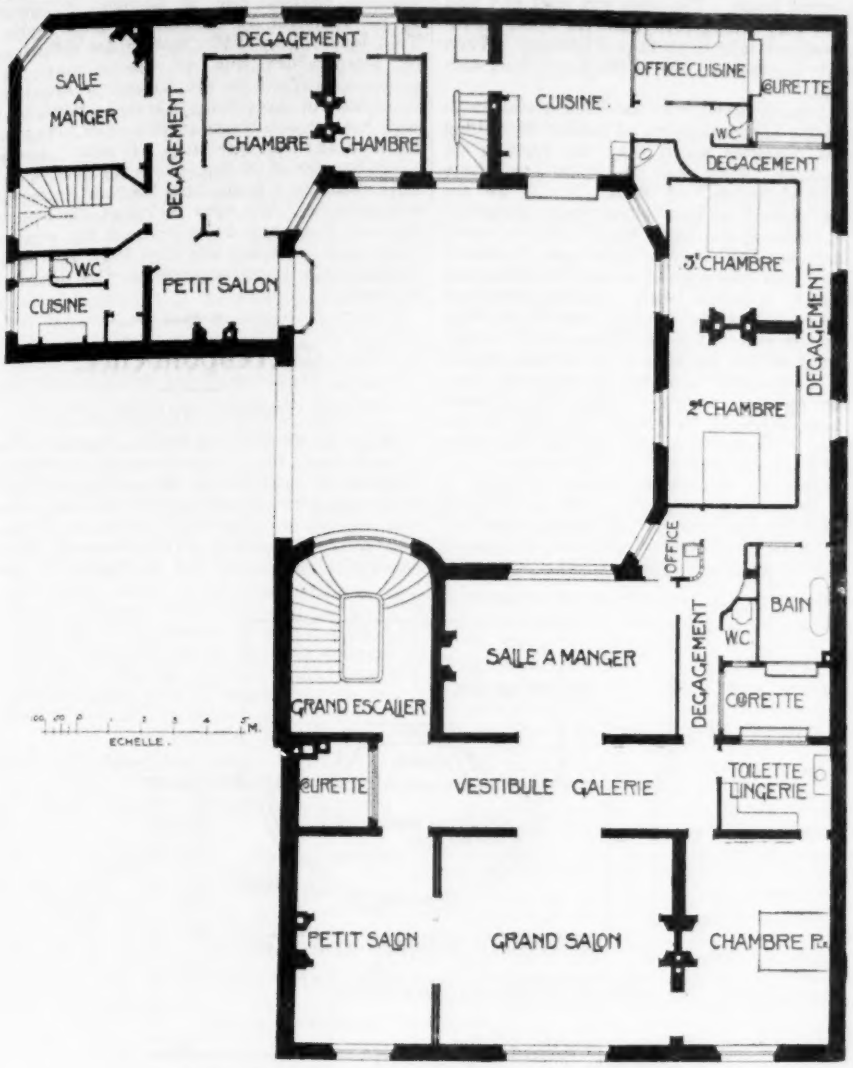
"RA PHOTO" SPRAGUE & CO LTD 4 & 5 EAST HARDING STREET FETTER LANE E.C.

FAÇADES IN THIS YEAR'S PARIS FAÇADE COMPETITION.

"THE GABLES," NIGHTINGALE LANE, CLAPHAM COMMON. Mr. [illegible]



"THE GABLES," NIGHTINGALE LANE, CLAPHAM COMMON.—Mr. James Leonard Williams, Architect.



House, Rue Fabert, Paris. Plan of Upper Floor.

new to us), is reproduced from the architect's drawing, and is, as will be seen, an example of quite a different order and of the most ultra-modern style. We give the plans of two of the floors, as the arrangement of a Paris apartment house of this kind is of some interest. It is very compact, and the most is made of the space; but the close contiguity, at one point, of a water-closet to the kitchen, from which it is lighted by a borrowed light, shows that French architects are still under the influence of rather primitive ideas on sanitation.

The building covers a surface of 3,000 ft., at a total cost amounting to 3*l.* 9*s.* per super. ft. The apartments looking to the courtyard are let at an annual rental of 50*l.*; those looking on the Esplanade des Invalides at from 200*l.* to 280*l.*

THE GABLES, NIGHTINGALE-LANE, CLAPHAM COMMON.

THE materials used externally are Portland stone, red facing bricks, and the roof covered with green slates.

The arrangement of the plan is largely due to fixed building lines on two sides and also to the desire to preserve two fine oak trees.

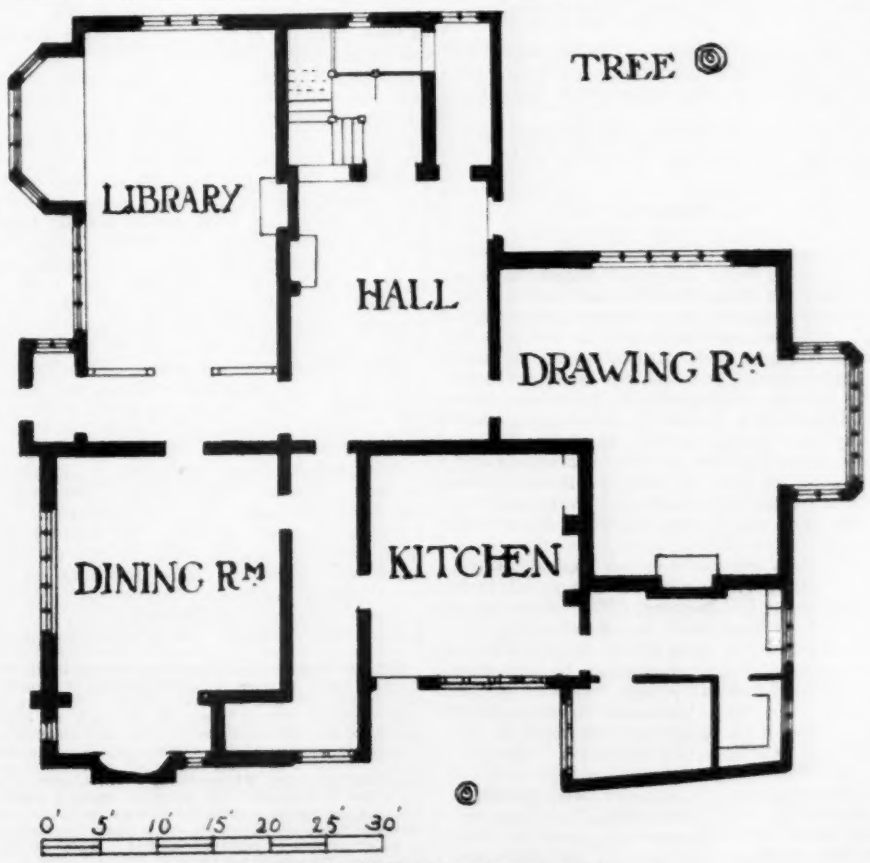
The principal feature internally is a two-story hall with a wide corridor running behind an open arcade at the first floor level, and leading to the principal bedrooms.

The drawing was exhibited at the Royal Academy a year or two back.

J. LEONARD WILLIAMS.

ENGINEERING SOCIETIES.

THE JUNIOR INSTITUTION OF ENGINEERS.—A large number of the members attended the visits on the 20th February, when the Colonial Consignment and Distributing Company's Frozen Australasian Meat Store, Nelson's Wharf, and Hay's Wharf and Dock, Tooley-street, were open to their inspection. At the former they were shown over by the Chief Engineer, Mr. C. S. T. Molesey, and Mr. J. H. Holton; and at the latter by Mr. Arthur E. Williams, representing the makers of the refrigerating plant—Messrs. H. Pontifex and Sons. At Nelson's Wharf cargoes of frozen beef and sheep are received in barges loaded from ships in the docks and in the river, and have to be raised to the sixth or "Receiving and Distributing Floor" by hydraulic cranes, and elevators termed "Sheep Syphons." The latter are endless chains having arms upon them across which the sheep are laid, and are driven by a 3-cylinder Brotherhood hydraulic engine, and deliver the sheep on to a receiving table on the distributing floor. The apparatus is adjustable to the position of the barge at any state of the tide and whilst at work. From the table the sheep are sorted on to trucks, and conveyed by hydraulic jiggers with wire-rope suspended cages on to the various floor-levels of the cold rooms; from which they are again raised by similar means when required for distribution, the trucks being lowered to the courtyard level van-loading platform by hydraulic direct-acting lifts. There are nineteen hydraulic elevating machines, made by Messrs. Waygood and Co., eight of which, together with a steam-driven sheep-elevator on the jetty, are capable of dealing with barge cargoes. It is therefore a comparatively easy matter to receive 10,000 or 12,000 sheep per day as an ordinary day's work; whilst as many as from 17,000 to 20,000 sheep in and out of stock have been handled in one day. Two systems of refrigeration are installed. One, the De La Vergne direct-expansion of ammonia process, for which there are two machines, each of 80 horse-power with 12-inch by 24-inch double-acting compressors, and compound-condensing steam-cylinders, with about 12 miles of 2-inch expansion pipes in the cold rooms, made by Messrs. L. Sterne and Co., of Glasgow; the other system is a cold-air compression and expansion machine of about 300 horse-power, made by Messrs. Haslam and Co., of Derby, with air-distributing ducts formed in the concrete foundations of the building, but which is seldom used. The "defrosting" plant is the invention of Sir Montague Nelson, and consists of a series of rooms fitted with ammonia expansion pipes, and steam-heating pipes, etc., the purpose of which is to thaw out, or "defrost" beef and mutton to the extent of 4,500 sheep and 2,000 quarters of beef per week, giving a daily output for market deliveries. The following figures afford striking evidence of the magnitude to which this trade has developed during the 24 years it has been in existence. During the year 1903 no fewer than 5,063,013 carcases of frozen sheep and lambs, and 137,679 quarters and pieces of beef arrived here from New Zealand and Australia alone (without counting 3,118,488 sheep and lambs, and 565,869 quarters of beef from the River Plate), a total of 8,181,501 frozen sheep and lambs, and 703,548 quarters of beef in the year.



"The Gables," Clapham Common. Plan.

COMPETITIONS.

LIBRARY FOR HERNE HILL.—At the meeting of Lambeth Borough Council the Libraries Committee brought up a report recommending that the design of Messrs. Wakeford and Sons for the new Herne Hill Library be accepted, and that the sum of 15*l.* 15s. be paid to each of the five architects next in order of merit. To the motion for the adoption of the report an amendment was proposed to the effect that the whole of the designs be submitted to an independent architect to be nominated by the President of the Royal Institute of British Architects. On behalf of the Committee, it was argued that, as the members of the Committee had themselves settled the ground plan beforehand and the arrangement of the different rooms, the principal question remaining in the examination of the designs was the elevation of the building, or, in other words, its external appearance. That question was, the Committee submitted, mainly an æsthetic one, and they conceived that if an assessor was appointed he would in this case advise the Council whether the conditions had, or had not, been complied with, and would leave the Council its own taste and discretion as to the artistic or inartistic appearance of the building, and to decide accordingly. The amendment was negatived, and the report was adopted.

STOCK EXCHANGE, MANCHESTER.—The new Stock Exchange, which is to be built in Manchester, will occupy the whole site within the confines of Norfolk-street, Kent-street, Sussex-street, and Pall Mall. Six architects—five from Manchester and one from Bolton—have been selected. They will submit designs to the Stock Exchange Buildings Company, and towards the end of April a choice will be made. The land has already been secured, and on the expiration of the lease on which the existing tenancies are held (at midsummer) it is proposed to pull down the old buildings and erect a new building suitable for a Stock Exchange. Part of the building will be used as offices.—*Manchester Guardian.*

BOOKS RECEIVED.

THE ROYAL INSURANCE COMPANY'S BUILDING, LIVERPOOL. Edited by J. Newby Hethering-ton. (B. T. Batsford. 21s.)

BOUNDARIES AND FENCES. By Arthur J. Hunt and Henry Stephen. (Butterworth and Co.)

VENEERING, MARQUETRY, AND INLAY. By Percy A. Wells. (Percival Marshall and Co. 6d.)

CALCULATING TABLES. By Dr. H. Zimmermann. Translated into English by L. Descroix. (Asher and Co. 6s.)

HANDBOOK OF TECHNICAL TERMS USED IN ARCHITECTURE AND BUILDING. By Augustine C. Passmore. (Scott, Greenwood, and Co. 7s. 6d.)

TRANSACTIONS OF THE INSTITUTION OF CIVIL ENGINEERS OF IRELAND. Vol. xxix. (Dublin: John Falconer.)

TRADE CATALOGUES.

THE Empire Roller Bearings Company send us a catalogue of their roller bearings suitable for rolling-stock and rotary machinery of all descriptions. A departure announced in the present circular is a new series of bearings for shafting and trolley work, these bearings being produced in the form of plummer blocks at prices which should have the effect of encouraging their employment more largely than heretofore. The economy claimed for these bearings is said to be equal to fully 50 per cent. in the power required for driving shafts, and to as much as 50 per cent. to 75 per cent. in lubrication generally.

We recently received from the General Electric Co. of Queen Victoria-street, a copy of their progress sheet for January, 1904. Reductions in price have been made in cut-out and distribution boards. A very cheap form of high-pressure pressel switch, similar to the pear switches used for electric bells, ought to become popular. We were favourably impressed by the method of plugging walls described in this leaflet. By the use of a tool called a "jumper," a hole of the proper size is readily made in brickwork, plaster, or masonry, with the minimum damage to the surroundings. A "limpet" plug made of well-seasoned wood is then inserted in the required position, and the wedge hammered home. The plug will hold any nail or screw very satisfactorily, and the whole operation need not take more than a minute. When properly inserted the face of the plug is flush with the wall.

We have received from the Edison and Swan Company, Ltd., a number of leaflets describing various novelties which they are putting on the market. They sent us at the same time a "critical notice" of them. Whilst we are always pleased to get letters from manufacturers pointing out what they claim as novel in their catalogues, yet their own "critical notices" can only appear in our advertisement columns.* Amongst other novelties described we notice a "safety" tumler switch for high voltage circuits. It is said to be able to break a current of five amperes at a pressure of 300 volts. If it is able to do this satisfactorily then in our opinion a very considerable advance has been made in the design of high voltage switches. We would suggest to manufacturers that if they got their switches rated by an outside authority electricians would be able to judge between the relative merits of switches made by different makers. At present what one maker rates as a five-ampere switch another will rate as a fifteen-ampere switch. This lack of uniformity is possibly due to the unsatisfactory nature of the Institution Rule for the rating of switches. Other leaflets describe flexible cords and patent pear switches for use on high voltage circuits. Many new designs in table standards, electroliers, and pendants for the electric light are also described.

The Mork Patent Pulley Block Co. send us their price list of High-grade Lifting Tackle, containing particulars of the "Mork patent" worm-geared pulley block, with quick return gear and self-sustaining brake. The important advantage possessed by this mechanism is that by pulling the chain connected with a lever, the worm can be thrown out of gear, thus permitting the empty hook to descend by its own weight. Similarly, when loads are being lowered, the empty hook can be rapidly raised to the required height by simply pulling the loose end of the load chain. By pulling the hand chain in either direction the worm is dropped instantly into gear, and the block is again transformed into a work geared pulley block. It is evident that the time saved by a pulley block which possesses these facilities must be a very important item to contractors and others. These blocks are made in various sizes, suitable for loads from one to ten tons.

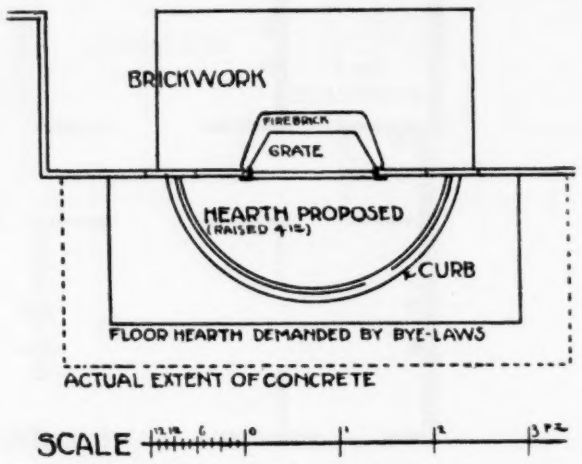
The General Electric Company, of Queen Victoria-street, have sent us a catalogue of their "Geeko" fire-alarms. Descriptions are given of many forms of automatic and "actuated" alarm devices. We think highly of a new and simple form of self-adjusting thermostat described. The drawback to the usual form of automatic thermostat is that it requires continual adjustment if it is to be always very sensitive. It is generally agreed that a sudden rise of 25 deg. F. ought to be sufficient to actuate an alarm device. This leaves very little margin for differences of temperature due to the seasons. The principle utilised in the automatic fire-alarm illustrated in this catalogue is that a thin copper wire has a much larger coefficient of expansion for heat than an iron strip. It acts if there is a sudden rise of 25 deg. above the normal, and automatically adjusts itself for slow changes of temperature. We note also that the General Electric Company have reduced the price of their main switches and that they have made considerable improvements in the design of cut-outs.

* This is, however, we have reason to believe, the way in which many of these laudatory notices of inventions and patents get into the daily papers. We have had such "critical notices" sent to us, and, of course, refused to pay any attention to them, and a day or two afterwards have read the identical notice in a daily paper. The ordinary daily press staff, as a rule, have no scientific knowledge; it is not thought worth while to pay for scientific opinion; the patentee sends a readable technical paragraph setting forth the merits of his invention, and this saves all trouble and is inserted in the paper as an expression of editorial opinion! They might at least have the conscience to insert "advt." after it.

Correspondence.

THE PUBLIC HEALTH ACTS.

SIR,—As another example in support of the urgent need for a commonsense drafting of building by-laws in the form of an intelligent enunciation of "principles of sound construction and sanitation" (instead of, as is now the case, the futile putting forth of effort to specify beforehand the details of the application of such principles to conditions of the future which can only be known when they arise) will you please allow me to cite the Liverpool method of controlling the construction of hearths?



The By-law (L.I.A., 1882, 35 (1) (2)) reads as follows:—

(1) Every fireplace-opening or chimney-opening in a domestic building shall have a sufficient hearth or horizontal slab of durable and incombustible material at the level of the floor extending throughout the length and depth of such opening and to a distance of at least 18 in. beyond the face of the chimney breast, and at least 6 in. beyond each side of the opening of the chimney piece.

(2) Every such hearth shall be laid upon a bed of mortar, concrete, brick, or other compact and incombustible material, having a depth of at least 6 in. below the upper surface of the hearth, and in no case shall the hearth be supported or rest on wood or timber.

Now, when this by-law was drafted, it was, presumably, not anticipated what would be required to meet the contingency of the present-day use of "well-fires," instead of the ordinary form of grate in vogue at that time. Consequently, when it is now found that a convenient form of hearth to use with a "well-fire" (in order to render it safer from spreading fire, and to provide for air inlets to the underside of the fire bars) is one which is raised above the level of the adjacent floor, and also that it is less of an obstruction to the floor-space, and, maybe, more effective in appearance to give the hearth a semi-circular shape, on plan, then, forsooth, the precious "positive" by-law comes into play, and this natural development in building which would otherwise take place is prohibited by the local authorities, "because it is against the by-laws," and not by reason of faulty construction. And, lest there should be any doubt as to this being the position taken up by the Liverpool Corporation, I may say that a "notice to amend" has been actually served upon the contractors in the case to which I refer.

This instance being an apt one in general illustration of the hindrance which the present system of drafting building by-laws places upon due progress and economy in building, I beg leave to send herewith drawings in further explanation, from which it may be noted what is considered by the local authorities to be

necessary, according to the by-law quoted, to render the hearth safe from the risk of spreading fire. It will be seen that two triangular pieces of wood flooring have been removed and replaced by concrete, and that then the cork carpet with which the floor is covered has been laid over the concrete; and that the iron curb fixed round the hearth to bind it together has a lip which stands up one inch above the plane of the hearth. To make the absurdity of this example more obvious, it may be mentioned that were the hearth made oblong in shape of the specified size and fixed on a level with the floor there would be no one inch lip nor fender nor curb demanded, and the cork carpet might be laid, not only over the two triangular pieces of hearth, but also be continued over the entire hearth, including, in the case of an ordinary description of grate, the back hearth as well. I leave your readers to determine the exact degree more safe from the risk of spreading fire which the required close adhesion to the building by-laws will render this particular hearth than as it was intended; and also to judge the precise practical utility of this "positive" by-law, as it stands, in respect of hearths in general. But I think it would be difficult to cite a more instructive case in favour of building by-laws being made as the enunciation of "principles of sound construction and sanitation," instead of purporting to specify beforehand a complete category of building construction suited to meet all possible contingencies which might arise, and of detailed particulars of effective compliance therewith.

T. MYDDELTON SHALLCROSS.

Liverpool, February 15, 1904.

WALTHAM ABBEY TOWER RESTORATION.

SIR,—It is suggested that pinnacles should be added to the top of this interesting tower. As the oldest print available, reproduced in "Abbeys Around London," shows no such finish, but battlements, it is sincerely to be hoped that the traditional features and the character of the tower may not be obliterated by the addition of what the architect never intended.

JOHN A. RANDOLPH.

The Student's Column.

ARCHES.—IX.

THE theory of the masonry arch is by no means free from complexity, and it can scarcely be said that there is even a general agreement between various writers on the subject. Numerous theories have been propounded from time to time based on different underlying assumptions, which are rarely defined so clearly as might be desired.

It would be impossible in a series of articles such as the present to include a fully detailed consideration of theories intended to elucidate the action of the arch. Nor would an attempt of the kind serve any useful purpose, for mathematicians have written bulky volumes on the subject without carrying conviction to the minds of their fellows, or clearing away the mists of obscurity from the minds of their less accomplished readers.

We propose, therefore, merely to state and, as far as possible within the limits at disposal, to elucidate some of the theories generally accepted by engineers, referring our readers to treatises wherein more fully detailed methods of discussion are adopted.

From previous articles, intended to dispose of various preliminaries necessary to enable students to follow and appreciate the points now to be raised, it has doubtless been gathered that no theory of the masonry arch can be more than approximately true. We have already shown in Art. VII. the inexactitude of results afforded by computations relative to the amount and distribution of the external forces, and the impossibility of determining the position of the true line of resistance with any close approach to accuracy.

These unavoidable difficulties account in great measure for the uncertainties attending the application of theories to arch construction, while other reasons are to be found in the customary disregard of the adhesion furnished by the mortar, and in the general want of data relative to the actual strength of masonry. Further, the strains in a masonry arch cannot

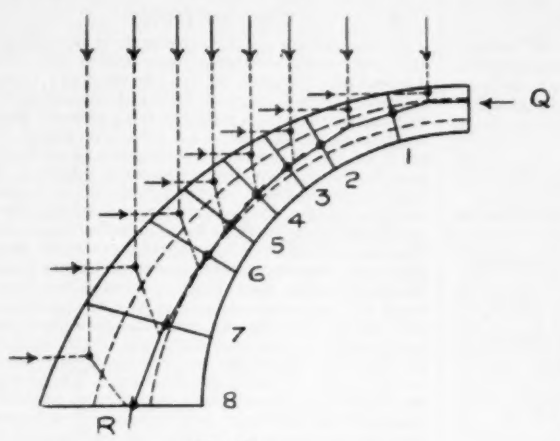


Fig. 47.

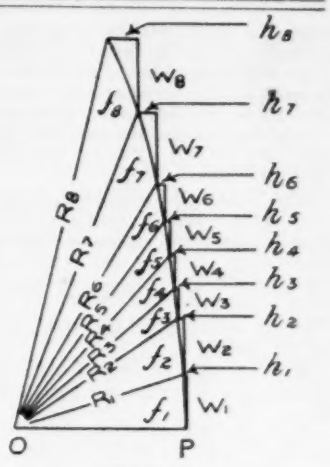


Fig. 48.

be precisely determined because of variations: (1) in the physical properties of the material employed; (2) in the quality of the workmanship of the masons who dress and lay the stones; (3) in the action of the centring, due to differences in stiffness and methods of striking; (4) in the spreading of the abutments; and (5) in the settlement of the foundations. None of these causes may effect any noticeable alteration of form, but their individual and joint action must clearly be felt by the structure.

However unerring mathematical reasoning may be, and however precise the means provided for the application of such reasoning, it is absolutely impossible to arrive at results unless adequate and accurate data are forthcoming. Consequently every theory is but an approximation. Nevertheless, as the effect of variation in any one of the factors enumerated above can only be estimated by a clear appreciation of the relations mutually existing between all the factors, the rational design and execution of arched structures should only be conducted by those who possess familiarity with theoretical methods.

A striking proof of the limitations characterising all theories hitherto proposed is to be found in the universal acknowledgment of the fact that every theory of the arch is nothing more than a method of verification. There is no such thing as a theory that will enable the architect or engineer to construct an arch in his mind or to build it up step by step, either figuratively on paper, or materially upon the actual site.

The usual process of designing an arch may be thus summarised:—

(1) The general dimensions are hypothetically settled, or taken from those of an existing arch of known stability, or fixed by the aid of some empirical formula.

(2) The loads are computed, and the assumed arch is tested by the theory selected. The line of resistance is drawn, and if this does not lie within the prescribed limits, the dimensions must be altered and the design must be tested again. If necessary, the process must be repeated until the conditions of stability are fully satisfied.

It is a somewhat humiliating thought that the resources of modern engineering science carry us so little beyond the methods of the ancient Romans. The first step in the design of an arch remains very much as it was 2,000 years ago, while the second stage, which is merely that of verification, is only improved in the respect that we adopt mathematical tests, while the arch builders of old applied tests furnished by practical examples.

That the modern method of verification is more precise, and logically leads to greater economy of material, no one will deny. Whether it leads to greater strength and durability may well be doubted in view of the wonderful structures that still survive as mementoes of the greatest builders of masonry arches the world has ever known.

The first theory of the arch to which we will direct attention is founded upon the hypothesis of least thrust at the crown, but, although due recognition is made of the horizontal components of the external forces, the results obtainable are only approximately accurate, owing to the uncertainty always existing with regard to the determination of the external forces themselves.

This theory may be illustrated most conveniently by a further employment of the data given by Professor Baker relative to the semi-arch represented in Fig. 46, p. 200. In what follows we assume the dimensions and the working conditions to be those already taken. Consequently, the maximum thrust at the crown is that given in Table I.

Having drawn the semi-arch to scale and represented the vertical and horizontal forces, as in Fig. 47, and having the necessary data in Table I., the force diagram is constructed, to any convenient scale, in the manner described below.

Lay off, as shown in Fig. 48, the line O P to represent the maximum crown thrust as given in line No. 4 of the last column in Table I. From P lay off the vertical force w_1, and from its extremity the horizontal force h_1. A line drawn from P to the left-hand end of h_1 will then represent the direction and value of the external force f_1 acting upon the first voussoir, and the line R_1, drawn from O to the upper end of f_1 will represent the resultant pressure of the first voussoir upon the second voussoir.

In the same manner lay off w_2 from the left-hand end of h_1, and h_2 from the end of w_2. Then f_2 will represent the resultant of the vertical and horizontal external forces, and R_2 the resultant pressure of the second voussoir upon the third voussoir.

By laying off lines in a similar manner to represent the vertical forces w_3, w_4, w_5, w_6, w_7, and w_8, and the horizontal forces h_3, h_4, h_5, h_6, h_7, and h_8, the directions and values of the forces f_3, f_4, f_5, f_6, f_7, and f_8, and the resultant pressures R_3, R_4, R_5, R_6, R_7, and R_8 can be determined.

In the diagrams of the semi-arch the points of intersection of the vertical and horizontal forces acting upon the several voussoirs are shown in Fig. 46, p. 200, by small circles, and in Fig. 47 by circular dots, the inclined lines passing through these points indicating the directions of the resultants of the external forces which act upon the several voussoirs.

Next construct the line of resistance by drawing from the point of application of the thrust Q—at the upper boundary of the middle third of the crown joint—a horizontal line intersecting the inclined line of force passing through the first voussoir.

From the point of intersection draw a line parallel to R_1, and produce it to intersect the inclined line of force passing through the second voussoir.

By continuing this mode of procedure down to the springing of the arch, a polygon is obtained generally similar to the polygon *m n o p* in Fig. 35, p. 113.

The points of intersection of the several lines parallel to the series R_1 to R_8, in Fig. 48, with the joints Nos. 1 to 8, indicate the centres of pressure on the various voussoirs composing the arch ring. For the purpose of identification a small circle is described in Fig. 47 about each centre of pressure, and a line connecting the centres of pressure would be the line of resistance. Owing to the small size of the diagram this line has not been drawn, as its approximation to the line of pressure would cause confusion.

Finally, enquiry should be made as to the stability of the proposed arch.

(1.) *Stability against Failure by Rotation.*—As the line of resistance evidently lies wholly within the middle third of the semi-arch ring—the boundaries of the middle third being indicated in Fig. 47 by dotted lines—and would touch the inner boundary of the middle third of the complete arch at two points, and the outer boundary of the middle third at one

point, the factor of safety against failure by rotation is 3 (see Article VI., p. 142).

(2.) *Stability against Failure by Crushing.*—To ascertain the unit working pressure, formula (2) must be applied, as explained on p. 142.

As at the crown of the arch, $d = \frac{1}{2}l$, the equation reduces to, $P = \frac{2\,W.}{l}$

In this case the values of the factors are :—

$W = 9{,}400$ lb., and $l = 1{\cdot}25$ ft.

Substituting these values in the equation we have

$$P = \frac{2 \times 9{,}400}{1{\cdot}25} = 15{,}040 \text{ lb. per square foot.}$$

At the springing of the arch the values of the factors are

$W = 21{,}700$ lb., $l = 4{\cdot}5$ ft., and $d = 0{\cdot}10$ ft.

Substituting these values in equation (2), we have

$$P = \frac{21{,}700}{4{\cdot}5} + \frac{6 \times 21{,}700 \times 0{\cdot}10}{(4{\cdot}5)^2}$$

$= 4{,}820 + 643 = 5{,}463$ lb. per square foot.

The ultimate resistance of limestone rubble masonry generally varies between 180,000 lb. and 260,000 lb. per square foot, and using a factor of safety of 8, we may assume the permissible unit load to be from 22,500 lb. to 32,500 lb. per square foot, while the safe loads for coursed rubble and ashlar masonry in limestone are considerably higher, and for granite ashlar higher still.

Hence it becomes evident that the maximum unit working pressure of 15,040 lb. per square foot, as found above, is so far below the safe limit for the commonest form of masonry, that the question of stability against crushing requires no further consideration.

It may be remarked, however, that if the maximum pressure is calculated to be greater at any joint than the permissible load for the type of masonry selected, it is necessary to increase the depth of the arch ring, and to repeat the process of computation described above. If the result is found to be unsatisfactory, the depth must be further increased, and tested, until the conditions necessary for safety are fully assured.

(3.) *Stability against Failure by Sliding.*—We have already shown (in Article VI., p. 142) that stability in this respect depends upon the angle made by the lines of pressure with the normal. Examination of Fig. 47 will show that the smallest angle between the lines of resultant pressure and the several joints is at No. 8—the springing joint. It will be sufficient to inquire into the safety of this joint, as its stability against sliding is less than that of any other in the semi-arch. The difference between the angle at the joint in question and the normal is (90 deg.—72 deg.) = 18 deg., and the tangent of 18 deg. = 0·33. As the co-efficient of friction for masonry with wet mortar is not less than 0·50, the factor of safety is $(0{\cdot}50 \div 0{\cdot}33) = 1{\cdot}5$, at least. But the co-efficient of friction even with slightly damped mortar is usually 0·70, and using this value the factor of safety becomes $(0{\cdot}70 \div 0{\cdot}33) = 2{\cdot}1$.

The factor of safety for each of the remaining joints can be calculated in a similar manner after measurement of the different angles.

In practice it is seldom the case that an arch will be unstable as regards sliding if it has been shown to be safe against failure by rotation, and failure by crushing of the material. If, however, such a contingency should be feared, a slight alteration in the direction of the joints may be effected so as to increase the value of the angle formed by the lines of pressure with the normal.

In circular arches the joints are usually made radial, a practice which ordinarily satisfies the requisite conditions. The joints in Fig. 47 will be found radial to the intrados, an arrangement which affords a little less stability against sliding than if they were radial to the extrados of the ring.

The foregoing demonstration simply furnishes a general solution for symmetrical loads, and we will next consider other applications of the theory.

HIGHER GRADE SCHOOL, CANTON, CARDIFF.—The new higher grade school at Canton, Cardiff, will be built on a portion of the site at present occupied by the Canton Cattle Market, and the school entrances will be in Market-road. The architects are Messrs. James and Morgan. The walls are to be built with local stock bricks, faced externally with suitable red pressed bricks. The structure is expected to cost about 20,000*l.*

ROYAL COMMISSION ON LONDON LOCOMOTION.

AT the sitting of this commission on Thursday last week evidence was given by Mr. Albert Gray, counsel to the Chairman of Committees in the House of Lords (Lord Morley). Witness dealt at some length with present Parliamentary procedure, and then proceeded to speak of the proposed establishment of an Advisory Board to deal with the whole question of London locomotion. Such a body could make annual reports to Parliament, in which they would make suggestions for improving means of communication. Promoters of all light railway and tramway schemes should place their schemes before that body. Answering questions by various members of the Commission, witness said that he saw considerable difficulties in the giving of powers to such a Board outside Parliament. It would be difficult to say what powers such a Board should have. There was no doubt that many of the minor local authorities took too parochial a view of many schemes for improvements in facilitating traffic, and in the circumstances there was doubtless a need for such a Board, which should consider not only those proposals brought forward by promoters, but also those that ought to be brought forward by promoters.

On Friday evidence was given by Sir Theodore Martin, K.C.B., who has had forty years' experience as a Parliamentary agent, principally in the promotion of and opposition to Railway Bills. Witness said he was opposed to the appointment of a Special Tribunal to deal with the question of London traffic, as he considered it would be very expensive, and, with regard to railway schemes, the interests involved were so enormous that on Parliament must be the responsibility of deciding. Such matters as the opening of streets and so on could be left to the local authorities. With regard to tube railways, he felt that seeing that many had been authorised, they had better wait until they were completed to know what needs were left unprovided for and how far they were favoured by the public so as to yield a fair return on the capital invested. He felt that tube railways were yet in an experimental stage, and it was not yet proved that they were what they should be as regarded ventilation, risks to life, and so on.

Mr. C. S. Meik was recalled and examined by Sir John Wolfe Barry on the question of new streets for London. The general conclusion he had arrived at was that the present need of London was improved streets, and that was the cardinal point to which he had given his attention. He wished to utilise the way leave, which the construction of a new street would give, in order to provide railway, tramway, and motor accommodation. The combination of the two would render both more feasible from the point of view of expense. His proposal was to have an open deck and a lower deck, and the heavy traffic would be carried on the lower road and the lighter traffic on the upper. All the through traffic would go through on the lower deck. To get access to the higher road, he proposed in some cases inclined roads at the back of the houses and in other cases by inclined roads in the centre of the avenue. The main avenues from north to south and from east to west should be 160 ft. wide. A considerable portion of the lower road would have to be artificially lighted, and he did not propose to have shops on the lower road. This would be devoted to basements and warehouses for the shops above. The upper road would be a substitution for the frontage as now existed in Oxford-street and the Strand.

Sir J. Wolfe Barry:—What occurs to me if this is the case is, what is the advantage of raising the road; why not lower it?

Witness said that if they lowered the road and caused the heavy traffic to go along that lower road it would mean many ups and downs at cross roads. Further, they had to deal with the question of the river, and if they sunk the road they would get into a difficulty, for the ground level on the south side was below the river level. They had approached the matter from all points of view, and came to the conclusion that the two-decked street was the best scheme. They would not be sacrificing any frontage, and there would be the frontage on the lower level. The foot passengers would go on the upper level, until it came on to rain, and then they would probably go below. The elevated railway would be suspended in the middle of the road on the upper deck, and underneath would be the motor road, with tramways on either side. He estimated that the average cost of the double-deck avenue would be 605,000*l.* per mile, and the average cost of the single-deck avenue would be 180,000*l.* per mile.

Mr. Walter Beer, who jointly proposed the scheme with Mr. Meik, was questioned by Sir John Wolfe Barry as to cost. The two main avenues from north to south and from east to west were twenty-four miles, and he allowed for forty-eight miles each of tramway and railways. The cost of land and buildings, after deducting recoupment and neglecting altogether tramways and railways, he estimated to be about 30 million pounds.

TREATMENT OF SEWAGE BY BACTERIA.

AT a meeting of the Yorkshire section of the Society of Chemical Industry, held at the Queen's Hotel, Leeds, on the 22nd inst., Mr. Jas. E. Bedford in the chair, Mr. W. J. Dibdin read a paper on this subject. Mr. Dibdin said in no other district had the bacterial treatment of sewage been more ably or enthusiastically taken up with the view to ascertaining the most economical and reliable means of applying this now generally recognised method of sewage purification than it had been in Leeds. The difficulty experienced with the ordinary coarse or "first contact" bed in those cases where the crude sewage was turned directly on to it was that the interstices between the particles of coke or clinker, etc., became filled with the finely divided matter in the sewage and carbonaceous residuum from the bacterial action on the organic matters. The grit or detritus tank and the septic tank left a quantity of sewage sludge to be disposed of. In discussing the question as to what could be done either to prevent the putrefactive action in the tank, whether "septic" or "grit," or to increase the efficiency of the coarse or first contact bed, he referred to the reports of the Manchester and Leeds Corporations, and he proceeded to say that in the case of a coarse bed filled with coke or clinker, etc., there were a number of solid particles presenting only an outer surface, the interior of the particles occupying space to no purpose. On consideration, it occurred to him that this interior space could be utilised by the employment of a material of hollow form, so that it would present an interior as well as an exterior surface on which the bacteria could grow. After trying tiles, he made an experiment at Devizes, in which waste slate débris was used. The slates were supported about one inch apart by small slate blocks. This arrangement gave no less than 80 per cent. of water capacity to the beds, thereby doubling their effective working capacity as compared with coke, etc. In fact, the bed at Devizes was exactly one-half the size of the fine bed into which it discharged, with the result that the cost of construction of an installation was reduced 50 per cent. By the use of slates the chief causes of loss of capacity were overcome. The growth of organisms would take place on both surfaces of the slates, and would not choke the spaces between, as in the case of coke, etc.

In the discussion which followed, Mr. Jones said that cases of the pollution of streams were constantly occurring in the North and East Ridings, and this pollution was not merely by manufacturers or individuals, but by local authorities, and was really disgraceful. When complaints were laid before the Local Government Board nothing was done. The worst of it was that the pollution was on the increase.

Dr. McLean Wilson stated that the most remarkable results in the way of treatment of sewage could now be seen at Knostrop. The sewage there came out bright and clean, and could do no harm in any river into which it might be turned. It was purified in about twenty minutes. Mr. Dibdin seemed to have got hold of a "good thing." His contact bed was one which presented the greatest extent of surface and held the greatest quantity of sewage, and he (Dr. Wilson) could not imagine any beds that would be more likely to fulfil these two conditions. At Knostrop were to be seen almost all kinds of bacterial and chemical treatment that had been suggested, and it was to be hoped that Col. Harding and his Committee would put in experimentally such a bed as Mr. Dibdin had suggested.

Dr. Evans remarked that an estate was on the point of being purchased by the Bradford Corporation, and before the new sewage works got into operation something like a quarter of a million would be spent. He failed to see that the people living on the banks of the Aire below Bradford would receive the amount of benefit that one ought to expect from the expenditure of so vast a sum of money.

Dr. Cameron stated that in Leeds they had been looking to the sprinkling system as the thing for the future rather than the contact beds, which had been tried with a greater amount of difficulty than the sprinkling form of treatment. The contact bed worked very well until it "struck." The second filter that was put down was still working well, but the first contact bed had had to be taken out and replaced. The question of cost was important, and Mr. Dibdin had sketched a mode of making his contact bed much cheaper and more efficient than it had hitherto been.

Mr. Fairley referred to the facility of cleaning out the slate beds, and pointed out that this greatly reduced the cost as compared with clinker beds.

Mr. Dibdin, in replying, said there was no question that slate beds would give double the working capacity of slag or clinker beds. The slate contact bed would be found not only the most economical, but far and away the best means of destroying the foul mass of animal and vegetable matter called sludge. Slate, too, was inert, and formed an admirable home for the bacteria. He was glad to hear from Dr. Cameron that the original fine beds put up on his (Mr. Dibdin's) suggestion at Knostrop were working well. The original beds at Barking, Sutton, and elsewhere were also working well, and producing good effluents. When they got an effluent that did not undergo putrefaction and in which fish could live, it was good enough for all practical purposes.

GENERAL BUILDING NEWS.

CHURCH, BUXTON.—At Whaley Bridge on the 20th inst. the foundation-stone of a new church in the parish of Buxton was laid. The new church when completed will consist of nave, chancel, tower, and spire, and will seat 280 people. The estimated cost is 2,150*l*. Messrs. Currey and Thompson, of Derby, are the architects, Messrs. Fox and Goddard the builders, and Mr. E. Beard contractor for the joiner's work.

PARISH CHURCH, RADCLIFFE.—Radcliffe Parish Church was reopened on the 18th inst., after renovation. The alterations have been carried out under the supervision of Mr. R. B. Preston, architect, Manchester. The floor of the nave and the aisles has been lowered to its original level; the responds of the chancel arch, which had been so damaged as to have almost lost their original contour, were carefully restored; a bed of cement has been put over the whole area of the church; and on the south side of the chancel a portion of the floor has been made movable so as to allow of the inspection of the old bases of the chancel arch. The vestry has been extended and a wood block floor laid under the seats; the church has been reseated, and the chancel entirely refurnished in Dantzic oak, with pulpit, low screen, choir stalls, prayer desk, reredos, and panelling. Improvements have also been made in the heating and lighting.—*Manchester Guardian.*

CHAPEL, TAFF'S WELL, GLAMORGANSHIRE.—The Wesleyan Chapel at Taff's Well was opened recently after rebuilding, the cost of the work being 1,000*l*. The chapel will now seat about 800 people. Besides the new seating accommodation, a chancel has been provided. The architect was Mr. A. O. Evans (Pontypridd) and the builder Mr. E. Williams (Whitchurch).

MEMORIAL CHAPEL AND WINDOWS, ST. AGNES CHURCH, BRISTOL.—At St. Agnes Church on the 13th inst. the Archdeacon of Bristol dedicated the south chapel, the building, which has been erected in memory of Mr. Laurance Bruce Fyffe, of the Indian Civil Service, formerly the head of Clifton College. The memorial includes a carved oak screen set in three arches which divide the south chapel from the rest of the church, and a carved oak reredos. The altar-piece is an Arundel production of Perugino's picture of the "Adoration of the Cross." The altar stands on a step of marble mosaic. There were also dedicated by the Archdeacon two clearstory windows. One of the clearstory windows on the south side is the gift of Mr. Wood Bethell, the architect of the church.—*Western Daily Press.*

SCHOOLS, ATHERTON, LANCASHIRE.—In connexion with this building, briefly described in our last issue, Messrs. Roger L. Lowe (Farnworth) ask us to add that the floors were laid with their patent Redwood Block flooring.

ST. MARGARET'S HOME, LONDON.—On the 13th inst., the Receiving Home for Children recently erected by the St. Pancras Board of Guardians, at a cost of some 13,500*l*., and known as St. Margaret's, was formally opened. The building, the erection of which was commenced some twelve months ago, is situated in the Leighton-road, Kentish Town, standing back about 175 ft. from the roadway. It is built of stock bricks with red brick arches and quoins; the floors are fire-resisting throughout, with wood block flooring to all rooms, other than the bathrooms and lavatories, which with the corridors, are laid with terrazzo. The building is lighted by electric light and gas throughout. It contains four floors, and provides accommodation for twenty boys, twenty girls, and twenty infants. There are six dormitories with ten beds in each, two isolation wards, and the usual dining and day-rooms. The administrative block is built for the need of eighty children, thus allowing for future extensions at the minimum of expense. The architect for the building was Mr. Albert E. Pridmore, London, and the general contractor Mr. C. Gray Hill, of London and Coventry. The principal sub-contractors were Mr. R. Clarke, for hot-water heating, and fire appliance; Messrs. John Finch and Co., for sanitary work and appliances; Messrs. Green and Co. (Sheffield), for cooking apparatus; Mr. Harold Downer (Watford), for electric lighting; The Brunswick Rock Asphalte Co. for asphalte; Messrs. Matthew T. Shaw and Co. for constructional steel work; Messrs. Carter and Aynsley, for brass work; and the Albion Iron Co. for stoves, etc.

THEATRE, HALIFAX.—It is proposed to replace the old Theatre Royal in Southgate, Halifax, with a new building. The new theatre will occupy the site of the present structure, including the old Shakespeare Hotel and other adjoining premises. The dress circle or principal floor will be five steps above the level of Southgate, and the principal entrances will be from that street. Messrs. Richard Horsfall and Son, of Halifax, are the architects.

WAREHOUSE, MACCLESFIELD.—The Royal Silk Warehouse, Macclesfield, has just been opened. The new building has a frontage to Walters Green of 100 ft., and is 50 ft. in depth. It has been built of pressed bricks, and the window sashes are divided by stone mullions, which are relieved and braced with stone courses. A tower surmounts the structure, and it is covered by a flat vulcanite roof. Mr. Jabez Wright was the architect, and the following were the contractors: Messrs. George Roylance, Ltd., builders; Messrs. Arighi, Bianchi, and Co. supplied the furniture and fittings, and Messrs. Harlow and Sons were responsible for the heating. The electricity works were carried out by Mr. R. Brown.

PREMISES, SOUTH-PLACE, FINSBURY, E.C.—Coventry House, as it is called, has been erected on the site of the old Metropolitan Hotel, and has frontages to South-place and South-street. The ground floor and basement will be devoted to the purposes of a restaurant. To the restaurant there is a separate entrance by a porch at the corner of South-place and South-street. A staircase will give access to the basement, where there is a kitchen, with serving-room, lifts, etc. The upper portion of the building is arranged in suites of offices, with a separate entrance in South-place. The hall, lined with oak, leads to a staircase, with an hydraulic passenger lift to all floors. The architects were Messrs. Davis and Emanuel, of Finsbury-circus.

BUSINESS PREMISES, BELFAST.—The business of Mr. John Cleland, known as the Clarence Printing Works, carried on for many years in Linenhall-street and Clarence-street, has been transferred to a new block of buildings erected at the corner of Great Victoria-street and Hope-street. The buildings have a frontage in Great Victoria-street of 60 ft. and a like frontage in Hope-street. The structure is five stories in height. The contract for the new building was carried out by Messrs. M'Laughlin and Harvey, Ltd., from the plans and under the superintendence of the architect, Mr. T. H. M'Caul. The following firms also had portions of the contract:—Plumbing and electric lighting, Messrs. Richard Patterson and Co.; gas-fitting, Messrs. James Louden and Co.; and power-hoist, Messrs. Robert Craig and Sons.

PUBLIC HALLS, GLASGOW.—Plans have been passed at the Glasgow Dean of Guild Court for the erection of a suite of public halls at the corner of South York-street and Govan-street. The new buildings will extend over half an acre of ground. The large hall, which will contain a gallery, will be 140 ft. long, by 60 ft. wide, and 45 ft. high, and will provide accommodation for 1,500 persons. Along either side of the hall are corridors, and, at the end of each, four stone staircases leading to the galleries. The principal entrance will be from South York-street, under a porch of granite pillars and pilasters, and through a vestibule to the crush hall, on each side of which are placed the retiring-rooms, cloak-rooms, etc. The three lesser halls, which are entered from Govan-street, will be able to seat from 200 to 600 respectively. Throughout the buildings will be lighted by electricity and heated by steam radiators, with air-extracting centrifugal electrical fans. The architects are Messrs. Bruce and Hay, Glasgow.

STAINED GLASS AND DECORATION.

WESTBURY-ON-TRYM, BRISTOL.—On Monday, February 22, a three-light window was dedicated in the Church of Westbury-on-Trym. The subject treated is "The Angel at the Tomb." It runs through the three lights without canopy work, and is an attempt at a naturalistic window. The moment chosen is the dawn; streaks of golden and greenish light cross a deep blue sky; Calvary and its crosses are silhoutted dark against light in the distance. In the foreground, the angel guards the tomb and addresses the women, while in the middle distance, three Apostles, just seen in the gloom, are entering the garden of Joseph of Arimathea. The work has been designed and executed by Messrs. Percy, Bacon, and Brothers, of London.

WINDOW, ILMINSTER CHURCH, SOMERSET.—A three-light window and tracery has been placed in this church. The subject is "The Nativity." The work has been carried out by Mr. H. A. Hymers, of Chelsea.

REREDOS, CHELTENHAM COLLEGE CHAPEL.—A large reredos, executed in stone, is in course of erection in the chapel at Cheltenham College, in memory of old Cheltenham pupils who fell in the South African war. It is designed by Messrs. Prothero and Phillott, architects, of Cheltenham, in the perpendicular style of Gothic. The reredos is 34 ft. wide and about 24 ft. high, and will contain fifty-six statues. Twenty-four of these are large statues, over 4 ft. high, representing great pioneers of the Church in England, from the early saints down to the later reformers, such as Raikes and Wesley. There are twenty-four smaller statues, representing pioneers of art, science, music, and literature, and eight smaller ones, again of four archangels and four patron saints. The work is being carried out by Messrs. Boulton, of Cheltenham, but we do not hear what artist is responsible for the execution of the statues; a matter of some interest, since sculpture can hardly be carried out by contract. The reredos is to be unveiled on April 6.

APPOINTMENTS.

UNIVERSITY OF LIVERPOOL CHAIR OF ARCHITECTURE.—At a meeting of the University Council on the 16th inst. Mr. C. H. Reilly was appointed to the Roscoe Chair of Architecture, left vacant by the resignation of Professor Simpson. Mr. Reilly, who is in his thirtieth year, was a scholar of Queen's College, Cambridge.

COUNTY ARCHITECT AND SURVEYOR FOR KENT.—At a meeting of the Kent County Council held on the 17th inst. the Committee appointed to select candidates for the office of County Surveyor presented its report, in which it was stated that 107 applications had been received when the lists were closed. Out of these eight candidates were selected for a personal interview with the Committee, and as a result the following three names were submitted to the Council for their final selection:—Mr. J. W. Horton, Deputy County Surveyor for Herts.; Mr. H. P. Maybury, Surveyor to the Malvern Urban District, and Mr. J. Slater, assistant County Surveyor for Lancashire. From these Mr. H. P. Maybury was elected unanimously. At the same meeting the Committee recommended the appointment of a County architect from April 1 next, and further recommended that Mr. Ruck should be offered this appointment. After some discussion Mr. Ruck was elected.

MONMOUTH.—At a meeting of the Monmouth Town Council recently, the appointment of a Borough Surveyor was again considered. The number of applicants, which at the last meeting had been reduced from forty-two to eleven, was now reduced to three, viz., Mr. F. R. Hybart (Barry), Mr. F. Thackeray (Darwen), and Mr. G. Grimwood (Birmingham). These gentlemen will be invited to attend the next meeting of the Council on March 7.

SANITARY AND ENGINEERING NEWS.

SEWERAGE AND SEWAGE DISPOSAL, SUTTON-IN ASHFIELD.—The Urban District Council have received the sanction of the Local Government Board to loans amounting to 22,550*l*. for the purposes of sewerage and sewage disposal in accordance with the scheme prepared by Messrs. Beesley, Son, and Nichols, of Westminster.

LOCAL SEWERS.—The Main Drainage Committee of the London County Council have sanctioned the construction of the undermentioned local sewers, subject to certain conditions recommended by the engineer:—Greenwich: 625 ft. of 9-in., 860 ft. of 12-in., and 30 ft. of 15-in. pipe and concrete sewers in proposed new roads on the Kidbrook-lodge estate between Kidbrook-grove and St. German's-place. Poplar: 830 ft. of 12-in. pipe and concrete sewers in Chapel House-street. Wandsworth: 150 ft. of 12-in. and (for surface water only) 570 ft. of 9-in. pipe and concrete sewers in proposed new road on the Eldon-house estate between Mitcham-road and Woodbury-street.

PUMPING STATION, CHELSEA.—On the 20th inst. Lord Monkswell, the Chairman of the London County Council, opened the new pumping station just completed at Lots-road, Chelsea. The pumping station has been erected to prevent flooding in low-lying districts, by pumping into the river the water which cannot flow there of itself by gravitation. The station is so placed that it commands both the northern low-level sewer, which runs from Hammersmith

to Abbey Mills and drains an area of 24 square miles, and the Counter's Creek sewer, which rises near Kensal-green and drains the greater part of North Kensington, Hammersmith, Fulham, Walham-green, and Chelsea. For the low-level sewer there are four centrifugal pumps, each having suction and discharge branches 23 in. in diameter and capable of discharging 1,500 cubic ft. of water a minute. The Counter's Creek sewer pumps are also four in number, but their branches are 32 in. in diameter and each can deal with 3,000 cubic ft. of water a minute. The power required for each of the pumps of the two classes is not very different—210 i.h.p. for those of the low-level sewer and 260 i.h.p. for those of the other—the difference in the amount of water they can deal with being accounted for by the fact that in the case of the former the maximum lift is 28 ft. while in that of the latter it is only 14½ ft. Each pump is worked by rope drives from a separate two-cylinder gas engine, with which it forms a complete unit, independent in every respect. Gas engines were selected as being most economical in view of the necessarily intermittent character of the pumping. The total cost of the station has been about 82,000*l.*, of which the buildings (erected by the Works Department) accounted for about 50,000*l.*, the pumps by Messrs. Easton and Co. for about 6,100*l.*, and the engines by Messrs. Crossley Brothers for about 10,300*l.*

FOREIGN.

FRANCE.—M. Gabriel Ferrier is completing a series of decorative paintings for the church at Domrémy, representing incidents in the life of Jeanne Darc.——M. Chaplain has just completed a marble bust of Bertrand, the mathematician, intended for the Salle des Pas Perdus of the Institut.——The jury in the completion for new Halles and a Salle des Fêtes at Auray, have awarded the first prize to M. Ramonatxo, architect, of Pontivy. ——The Nord Railway Company are about to establish a new independent line from Paris to Compiègne, with eight stations en route. The estimated cost is 43 million francs. There is also talk of a new direct line to Biarritz, instead of obliging passengers to alight at the Gare de la Négresse.——M. Sainte-Anne Louzier has been elected President, for 1904, of the Union Syndicale des Architectes Français; M. Moreau is elected President of the Société des Architectes of the Yonne department; M. Carlier, President of the "Société Régionale du Midi de la France," and M. Platel, President of the Architectural Society of Hâvre.——Architects wishing to exhibit at the New Salon must send in their works on March 18 and 19. Associates have till March 20 to 29, and members send in on March 30 to 31.——A competition has been promoted, open to all French architects, for a Hôtel for the Société Amicale of former pupils of the Ecole des Mines, to be erected at St. Etienne.——A new hospital is to be built at Béziers, at an estimated cost of 2,800,000 francs.——The municipality of Arras are organising an art exhibition from May to October, limited to exhibitors belonging to the northern districts of France, and in which architecture will occupy an important place. ——M. José Frappa, a painter of talent, is dead, at the age of 50. He was a pupil of Pils, and had exhibited frequently since 1876. He was a member of the Société Nationale (New Salon), and has left a considerable number of works. Besides a certain number of portraits may be mentioned pictures entitled "Fête de san Eminence"; "Derniérs Moments de St. François d' Assisse;" "Pie VII. et Napoléon à Fontainebleau"; "La Tentation de St. Antoine"; etc.——The death is also announced, at the age of 44, of the sculptor André Hondain, a former pupil of Cavalier. He received a Mention in the Salon of 1887 for his Danaë, now in the museum at Rochefort, and obtained medals in those of 1889 and 1890, in the latter year for a statue of a Faun which excited much attention. The Galliera Museum possesses a group by him in stone, entitled "La Guerre." He was also the author of the monument erected at Melun to the memory of Pasteur. He exhibited at last year's Salon a statue of a young girl, which was much admired.

GERMANY.—A new State Theatre is to be built at Munich, as the old one would not be safe in case of panic.——An exhibition of the works of Gottfried Semper is to be held in the museum at Hamburg.——Herr Hermann Obrist has published a book entitled, "New Possibilities in Decorative Art," and essays ("Neue Möglichkeiten in der bildenden Kunst"), in which he denounces much of the modern German art, and urges the architects of his country to adopt a national style, and to throw off the academic restraints with which they seem to be burdened.——An important Industrial Exhibition is to be held at Magdeburg in August of this year.——The church of Hauterive in Freiburg is being restored under the direction of Professor Zemp and Herr Leo Chatelani; an examination of the building has brought to light some interesting frescoes that had hitherto been covered over.——The Park Restaurant at Mannheim, which was burnt down, is to be rebuilt according to the plans of Herr Karch. ——A new prison is to be built at Mannheim at a cost of 3,200,000 marks.——The building of the new Town Hall at Dresden has been placed in the hands of Herr Kräter and Herr Roth.——The Augustus bridge at Dresden, one of the oldest stone bridges in Germany, is to be destroyed. The bridge was built in the XIV. century, and it is to be regretted that it has been found necessary to replace it; but for years it has been unsafe, and has required constant repairs; moreover, the narrowness of the arches is a check on the increasing shipping traffic on the river Elbe. In connexion with the building of the new bridge, important alterations are to be made in the Theaterplatz.

AUSTRIA.—The group executed by the sculptor Josef Heu, which has been exhibited in Vienna, has been bought by the Town Council. It is called "The Releasing of the Spring" (Die Befreiung der Quelle) and represents two giants straining every muscle in their efforts to raise a boulder, from beneath which trickles a stream of water. The group is to be erected as a fountain in the Park at Vienna, a basin being constructed at its foot. ——A Nibelungen Memorial is to be erected on the banks of the Donau. The sculptor, Herr Seip, intends to represent Rüdiger, with his sword in his hand, as a symbol of loyalty and courage. The figure is to be of stone, but the sword and helmet are to be cast in green glass.——Important national schools have been built at Vienna under the management of the engineer Herr Josef Schacher; the building contains both a boys' and a girls' school and will accommodate 2,450 scholars.

MISCELLANEOUS.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS. —Mr. Edwin O. Sachs, architect, has removed his offices from No. 3 to No. 7, Waterloo-place, Pall Mall, S.W.

THE CONSISTORY COURT OF LONDON.—At a sitting of the Court in St. Paul's on February 12, Dr. Tristram, K.C., Chancellor of the Diocese, granted a faculty for some alterations and improvements of the parish church of St. Nicholas, Chiswick, so as to adapt the east end of the south aisle, which is now separated from the chancel by an open screen, for purposes of a morning chapel, with a second holy table and a reredos. The faculty embraces the sale of a painting of David, by Zoffany, which, since the demolition of the old church—the tower excepted—has been kept in the vestry. The church was rebuilt in 1882-4, after designs by J. L. Pearson, R.A. Dr. Tristram also granted a faculty for some structural alterations of the Church of Holy Trinity, Brompton, which will include the fitting of seats in a small west gallery and the painting of the walls in fresco. Holy Trinity Church was built, for 1,500 sittings, in 1826-9, after designs in the early English style, by Professor Donaldson. In 1860 the fabric was restored by Sir A. W. Blomfield.

CHURCH BUILDING SOCIETY.—The Incorporated Society for Promoting the Enlargement, Building, and Repairing of Churches and Chapels held its usual monthly meeting on the 18th inst. at the Society's house, 7, Dean's-yard, Westminster Abbey, S.W., the Rev. Canon C. F. Norman in the chair. Grants of money were made in aid of the following objects, viz., building new churches at Grimsby, All Saints, Lincs., 125*l.*, and Reading, St. Mark, Berks, 170*l.*, and towards enlarging the churches at Downe, St. Mary the Virgin, near Farnborough, Kent, 5*l.*; Hither Green, St. Swithin, Lewisham, Kent, 50*l.*; and Newcastle-on-Tyne, St. Matthew, 40*l.* The following grants were also paid for works completed:—Greetham, All Saints, near Horncastle, Lincs., 45*l.*; Oystermouth, St. Peter, Glamorgan, 150*l.*; Wealdstone, Holy Trinity, Middlesex, 35*l.*; Willesden, St. Matthew, Middlesex, 20*l.* on account of a grant of 100*l.*; and Biggin Hill Mission Church, near Sevenoaks, Kent, 25*l.* In addition to this the sum of 150*l.* was paid towards the repairs of fifteen churches from Trust Funds held by the Society. The Committee announce that the Bishop of London, Vice-President of the Society, has consented to preside at the Annual General Court at the Church House on Thursday, May 19, at 3 p.m.

CAPE COLONY IMPORTS.—A statement of the imports into Cape Colony for the nine months ended September 30, 1903, has been published in the *Cape of Good Hope Government Gazette*. From this it appears that the imports of cement were valued at 112,000*l.*, as against 65,000*l.* in the corresponding nine months of 1902; of paints and colours at 124,000*l.*, as against 75,000*l.*; and of wood and manufactures of wood (including furniture and cabinet ware) at 1,636,000*l.*, as against 889,000*l.* Respecting the cement trade, the correspondent of the Board of Trade at Cape Town writes: "This article has been the subject of many experiments on the part of both shippers and importers before now, the competition being very keen. It is stated that one or two big Continental houses intend to adopt yet another change of tactics, by establishing their own depôts in the various coast ports, in each of which they would hold large stocks. Such a course, if decided upon, will take time before the scheme can be put in working order, a fact which will be appreciated by merchants who at present hold large quantities. The slackness in the building trade has caused a decrease in buying orders from builders, with the result that prices all round have dropped to a considerable extent. A good deal of the cement on hand has been forwarded on consignment, so that the losses sustained do not fall so directly on sellers, which may in some measure account for the present state of the market. Prices vary according to quality, ranging from 9s. 6d. to 13s."

NEW TECHNOLOGICAL DICTIONARY.—The universal technical dictionary for translation purposes, in English, German, and French, the compilation of which was begun in 1901 under the auspices of the Society of German Engineers, has received help up to the present time from 363 technical societies at home and abroad: fifty-one of these are English, American, South African, etc.; 274 German, Austrian, and German-Swiss; and thirty-eight French, Belgian, and French-Swiss societies. Of firms and individual collaborators, 2,573 have promised contributions. The excerption of texts in one, two, or three languages (handbooks, pamphlets, business letters, catalogues, price lists, etc.), and of the existing dictionaries, has yielded 1,920,000 word-cards so far. To these will be added within the next two years (by the middle of 1906) the hundred thousands of word-cards that will form the result of the original contributions—those already sent in and those still expected—of the 2,573 collaborators at home and abroad, when the editors in Berlin have finished them for the press. All the outstanding contributions will be called in by Easter of this year, 1904. The editor-in-chief is Dr. Hubert Jansen, Dorotheenstrasse 49, Berlin (N.W. 7).

MANCHESTER SOLDIERS' MEMORIAL.—A meeting of the Committee of the Manchester Soldiers' War Memorial Fund was held in the Town Hall recently, with the Lord Mayor in the chair. It is stated that Colonel Clapham moved and the Lord Mayor seconded a resolution that the Executive Committee should be requested to invite Messrs. H. Pegram, A.R.A., Alfred Drury, A.R.A., Hamo Thornycroft, R.A., G. J. Frampton, R.A., John Cassidy, and F. W. Pomeroy to furnish models or drawings of a memorial to be erected at a cost not exceeding 2,000*l.* (inclusive), and afterwards to submit to the General Committee the name of the sculptor whom they recommended should execute the commission. This was not carried, but, upon a ballot being taken, it was resolved that Mr. Thornycroft should be communicated with with a view to his undertaking the work.

WAR MEMORIAL, BEESTON, NOTTS.—A South African war memorial was recently unveiled at Beeston. The memorial stands on a site in Post Office-square and takes the form of a statue symbolical of Hope, standing 17 ft. in height. It has been executed in Portland stone from the designs of Mr. A. Marshall, architect, of Nottingham.

YORKSHIRE MASTER BUILDERS.—The Executive Council of the Yorkshire Federation of Building Trade Employers met in Bradford on the 18th inst., at the Café Royal. The attendance included delegates from Leeds, Huddersfield, Hull, Halifax, Barnsley, Wakefield, Scarborough, and York. The proceedings were private, but it is understood that the chief business was a discussion concerning ways and means of bringing about a closer union between masters and men in the building trade. Later in the afternoon the delegates, who numbered close upon sixty, paid a visit to Lister Park, and inspected the Cartwright Memorial Hall. Tea was afterwards partaken of at the Café Royal. The President (Mr. E. Good, of Hull) occupied the chair.

BOURNEMOUTH MASTER BUILDERS' ASSOCIATION.—The sixth annual dinner of the Bournemouth and District Master Builders' and Decorators' Association was held at the Hotel Metropole recently, the President (Mr. H. Harding) presiding. After the loyal and patriotic toasts had been honoured, "The Trade and Commerce of the Borough" was proposed by Mr. H. W. Woodall. He expressed himself as favourably disposed to an undercliff drive and the erection of a pavilion or kursaal, but with neither of these schemes must they only go half way. Mr. W. Hoare,

J.P., replied. The position of Bournemouth to-day was not only due to the builders and architects, who had had their share in the development of the place, but it was also on account of the very strict sanitary arrangements that had been carried out. The sanitary arrangements had a good deal to do with the prosperity of a seaside resort. Now they had got the people, they must entertain them and keep up to date. The great thing they required was a pavilion. The Winter Gardens was a splendid thing, but the very time when their visitors wanted a place to meet in they were locked up for practices and rehearsals. The visitors had nowhere to go except the Arcade, and he did not think that was the place for a town like Bournemouth to have to welcome its visitors. They badly wanted a town hall. Mr. C. W. Keep proposed "The Mayor and Corporation," and the Mayor (Alderman J. E. Beale) responded. He agreed that the enterprise, energy, and ability of the builders and architects of the town had done a great deal to make Bournemouth. In order to get approximately their present position he had obtained figures. He found that in 1903 the rateable value of Bournemouth was 460,980*l.*, while to-day the rateable value amounted to 555,430*l.* The number of houses occupied in 1893 was 10,881, and to-day the total was 11,280. There were 180 empty houses in 1903, and to-day, notwithstanding the acknowledged depression which existed, the number was only 200. The number of houses in the borough in 1903 was 11,061, and to-day there were 11,480. Alderman Mate proposed "The Master Builders' and Decorators' Association," and said that building was undoubtedly the most important local industry, employing a larger number of workpeople than any other trade in the district. It was an organised trade, but organised in no spirit of hostility towards the workman. The Chairman and Mr. Hillier replied to the toast, the latter stating that the master builders and decorators of Bournemouth had banded themselves together for the benefit of employers and workmen and to promote good building. He did not think any of their members were shoddy builders, or jerry-builders as they were called, or that they would find any at all in Bournemouth. He regretted the absence of Councillor Minty, their secretary. The toast of "Kindred Associations" was proposed by Mr. J. W. Davis, and responded to by Mr. W. W. Evans (President of the Portsmouth Master Builders' Association) and Mr. H. Cawte (President Southampton Association). Mr. J. A. Nethercoate proposed the toast of the "Architectural Profession," and said that the pioneer architect of Bournemouth was the late Mr. Creeke. They had in Bournemouth to-day worthy gentlemen of the profession who prepared the best of designs, and he was sure they as builders did their utmost to carry those designs out in every detail. Mr. Thomas, in reply, said he thought the standard of work in Bournemouth had advanced very considerably during the last fifteen or twenty years. Mr. D. Drake proposed "The Visitors," Alderman J. C. Webber and Mr. J. Jones responding.

DISCHARGE OF HEATED WATER INTO A SEWER.—The Main Drainage Committee of the London County Council reported as follows at Tuesday's meeting of the Council:—"We have to report that, owing to the inconvenience caused by the continued discharge into the northern low-level sewer in Fulham Palace-road of water or other liquid of a very high temperature from the premises of the Hammersmith Distillery Company, steps were taken to ascertain the temperature of the liquid at the point of discharge between December 15, 1903, and January 15, 1904. During that period readings varying from 112 deg. F. up to 164 deg. F. were obtained on seventeen days, although the limit prescribed by section 9 of the Council's General Powers Act, 1894, is 110 deg. F. only. In view, therefore, of the fact that discharges of such high temperature as those recorded involved danger to the life and risk of injury to the health of persons entering the sewer, we directed the solicitor to take proceedings against the Company. Seventeen summonses were accordingly issued, and the case was heard on February 17, before Mr. Rose, at the West London Police Court, when the Company was fined 5*l.* and 10*l.* 10s. costs on the first summons, and 2*l.* and 2s. costs on each of fifteen other summonses, or 47*l.* in all. As regards the remaining day on which the temperature of the liquid discharged was over 110 deg. F., or two degrees only above the statutory limit, the summons was dismissed. We may add that the Company was convicted of similar offences on April 10, 1902, and February 18, 1903, when fines and costs amounting to 15*l.* 7s. and 40*l.* 6s. respectively were imposed."

RESTORING OLD YORK.—An interesting and quaint corner of York has just been restored through the public spirit and generosity of Mr. Frank Green, of the Treasurer's House. To make way for the new thoroughfare of Deangate, from Minster Yard to Goodramgate, some old houses in the latter street have been pulled down, leaving exposed the old archway from Goodramgate to College-street. This was one of the quaintest bits of the surviving old houses of York, and possessed special interest from the fact that it formed part of the premises in College-street occupied by George Hudson when the famous railway king was a linendraper. The archway and the shop to which it is attached have been purchased by Mr. Frank Green, who has had the archway restored, in half-timbered work, under the supervision of Mr. Temple Moore, the architect. The archway is supported on the southern side by oaken pillars, giving access to Deangate, while the open timber work of the story above the arch retains all the ancient features of the building. The excellence of the work will insure its preservation for many years.—*Yorkshire Post.*

CAPITAL AND LABOUR.

EMPLOYMENT IN JANUARY.—According to returns furnished by seventy-six employers' associations, whose members are estimated to employ about 89,000 workpeople, and by trade unions with an aggregate membership of about 185,000, employment with all branches but masons is bad, and shows no improvement as compared with a month ago; compared with a year ago it is worse. With masons employment on the whole is moderate, and shows no great change as compared with a month or a year ago. Employment with bricklayers is reported as dull generally, and rather worse than a year ago. With masons it is moderate in England and dull in Scotland. With carpenters and joiners, painters, plasterers, and slaters and tilers it is dull generally. The percentage of unemployed trade union carpenters and joiners at the end of January last was 7·7, compared with 7·9 at the end of December, and 6·5 at the end of January, 1903. Employment with plumbers continues dull generally. The percentage of unemployed trade union plumbers at the end of January was 9·3, compared with 7·7 at the end of December, and 6·4 at the end of January, 1903.—*Labour Gazette.*

Legal.

JARRAH TIMBER AND WOOD PAVING.

THE case of Samuel *v.* Bateman and the Jarrah Timber and Wood Paving Corporation, Ltd., came before Mr. Justice Bruce and a special jury in the King's Bench Division last week.

The plaintiff's case was that in the early part of 1901 he was approached by the defendant, Mr. Bateman, a director of the Jarrah Timber and Wood Paving Corporation, to advance a loan of 5,000*l.* to meet an overdraft and to enable the Company to pay preliminary expenses in connexion with a large area of virgin forest in Australia. Finally, plaintiff agreed to advance the 5,000*l.* at 6 per cent. per annum, and in consideration of doing so the plaintiff was given an option on 30,000*l.* of debentures at 60 per cent. discount, and that he should have all future underwriting operations at a commission of 10 per cent. The plaintiff said that at first he pressed for a commission of 2½ per cent. for the loan, but was induced to forego that, as Mr. Bateman told him the Company would not and could not afford to pay any commission. Plaintiff was afterwards repaid his 5,000*l.* It then came to the plaintiff's knowledge that the Company had paid Mr. Bateman commission for obtaining the loan from plaintiff, and 30*l.* for entertaining him during the negotiations. The plaintiff, therefore, claimed that he was entitled to the commission.

The defendant said that the money he received from the Corporation was by way of commission on various things he had done for the Company, and included director's fees. It certainly was not commission on the loan obtained from the plaintiff, although it appeared under the head of commission.

In the result the jury found in favour of the plaintiff, and judgment was entered for him for 100 guineas as against Mr. Bateman only.

Mr. Duke, K.C., and Mr. Nield appeared for the plaintiff, and Mr. Rawlinson, K.C., and Mr. Houston for the defendants.

A WISBECH ARCHITECT'S CLAIM.

IN this case, which was heard on Friday last week, at the Wisbech County Court, Mr. F B. Ward, architect, sued Mrs. Harrison for 23*l.* 13s. 4d. for professional services.

The plaintiff's evidence showed that on April 2, 1903, he received a letter from the defendant, saying that she contemplated extensive alterations to a farmhouse at Hillside, Holbeach Hurn, and asking his terms. Plaintiff replied stating his terms, and had an interview with the defendant. Subsequently he went to the house and took the measurements. The work consisted of pulling about a very old house, and altering it, adding rooms, etc. After he had made the measurements, he received instructions to prepare the plans. Plaintiff saw defendant on March 16, and at that interview she propounded further proposals, and fresh plans had to be prepared. The defendant asked him if he could name the cost, and if it would cost 200*l.* He told her that he could not say that as the work was too intricate. Fresh plans were sent to Mrs. Harrison, who proceeded to invite tenders. On April 26 defendant changed her mind for the third time, and wrote again suggesting further alterations, and he again had to revise his plans. On May 5 she received two tenders, one for 354*l.* and one for 275*l.*, and complained of the amount, asking plaintiff if he could suggest any reductions. He, consequently, prepared fresh plans, for the fourth time, for carrying out those instructions. A second lot of tenders were then invited, and three were received, for 270*l.*, 212*l.*, and 186*l.*, by Mr. Yallup. The last tender was accepted, and the work was to be completed by June 20 under a penalty. On July 12 defendant asked plaintiff to take certain work out of the builder's hands, and on July 14 the builder was dismissed from the business, at the request of defendant. After that, defendant had the work completed by local builders, and she told plaintiff that she would not require his services any longer to supervise the work. In cross-examination the plaintiff denied that 200*l.* was named to him as the limit, but said 200*l.* was stated as the approximate sum. He did not say that he could prepare plans to carry out the work for 200*l.*, nor was he instructed to prepare his plans for 200*l.* He declined to say at the time that it could be done for 200*l.* Ultimately the jury returned a verdict for the plaintiff, one juror remarking that they would deduct nothing, and that they thought the plaintiff had done a great deal of work for his money.

[The foregoing is abridged from a report in the *Wisbech Standard.*

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

1,812 of 1903.—G. CHAMBERS: *Kitchener.*

The bottom rests upon a frame mounted on pivots and connected at the back with a rod passing underneath. By drawing the rod forward the bottom is raised and the ashes fall into the ashpan. The boiler is made with a flue at the top. The front of boiler is made sloping towards the back. The oven is provided with a shelf, which is drawn out on the opening of the oven door.

4,029 of 1903.—CLAUGHTONS, LTD., AND E. AUSTIN: *Hot Water Apparatus.*

This relates to a self-contained apparatus that will deliver water of any desired temperature from scalding hot down to cold, and that may be regulated to any temperature between those two extremes, and comprises a gas regulator that is operated by the change of water level from one point to another with consequent variation of pressure.

4,399 of 1903.—YATES, HAYWOOD, AND CO., LTD., AND S. HAYWOOD: *Cooking Ranges and other Fireplaces.*

This consists of an improved bottom grate having a segmental movement when its front edge is raised by means of a poker or other lever inserted into a hole prepared for it, or by other means. On each side of the grate near the back edge a disc is affixed, which may be varied in diameter and width according to the size and weight of the grate. Upon each side of the fireplace a semi-circular bearing is affixed to receive the disc upon the grate, which can be readily placed in position, and which when so placed will by gravity assume its lowest position. Side cheeks, or strong plates, are prepared to fit against each side of the range, and are shaped to fit upon the upper part of the discs before mentioned, and rise above the bearings. The weight of these cheeks and their frictional contact with the discs is sufficient to support and retain the grate, when in use, in any desired position. The invention further consists of a removable oven, which can be withdrawn from its normal position in the range without the usual difficulties which attend the removal of ordinary ovens, and to retain it in position a narrow flange or depending edge is prepared upon the back of the oven, which, when the oven is pushed back to position, engages with a recess and is thus prevented from being drawn out until it is raised.

*All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

4,656 of 1903.—A. CRAIG: *Rolled or Drawn Girder Section Beams and the like.*

A girder or similar beam consisting of a rolled or similar parallel girder in which the flanges have been caused to approach one another.

5,510 of 1903.—G. SMITH AND W. CRAIG: *Chimney Tops to Prevent Down Draught.*

Chimney tops for preventing down draught consisting in the provision of diamond-shaped bars and V-shaped bars therein, and in the attachment of the chimney top to chimney pot or can by means of lugs, or their equivalent.

5,612 of 1903.—J. GORDON: *Bolts for Fastening Doors, Windows, and Shutters.*

A bolt for fastening doors, windows, and shutters, having the stem of the bolt proper working in a slot in the barrel, which slot is made of a curved inclined shape near one or both ends so as to act upon the said stem and impart a turning movement to the bolt as it is being shot forward or withdrawn.

5,775 of 1903.—R. A. SAYER: *Means of Making and Fixing Ornamental Ceilings or Partitions.*

This consists in affixing raised or embossed ornamental materials to large sheets of millboard, compo-board, parquet boards, or the like previous to their being fixed to ceilings, walls, partitions, and the like.

5,928 of 1903.—E. TAYLOR: *Method of Attaching Door Knobs to Spindles.*

The use of a headless neck-screw made with projecting flat foot or flange fixed internally in a square spindle hole in a knob, comprising the combination with a split or divided spindle made with a countersunk hole at one end of each half spindle.

6,303 of 1903.—T. ROBERTS: *Windows.*

This relates to window sashes and frames so constructed that inlet and outlet currents of air can be obtained without creating draughts. In practice a window is provided with sashes one above the other in a frame, the sashes being hinged or pivoted at or near their lower ends whereby they may be opened towards the interior of the room. The sides of the said frame are at right angles to the inside faces of the sashes, and of sufficient depth or width to permit of the opening of the sashes for ventilating purposes, and so as thus not to permit of side draughts or currents of air to enter the room.

6,550 of 1903.—A. POSSEKEL: *Windows.*

This invention relates to windows, especially to such as are adapted to swing on horizontal axis, and has for its object to improve the construction of this class of windows, in such manner that the position on the horizontal axis upon which the window swings may be changed from a place distant from the window, and so that the lines of contact between the window frame and the window casing are hermetically closed by a special frame which is so arranged that it can be removed from and to the window and that, whilst it is opened and the window released, the horizontal axis cannot be changed.

6,930 of 1903.—P. MCCALLUM: *Siphons for Water-closet or like Cisterns.*

Siphons for water-closet and like cisterns consisting in the combination with an ordinary siphon of a branch formed with a valve seat, an elastic or other ball valve, and a weighted cylindrical vessel resting on same and sliding within an outer cylinder.

7,284 of 1903.—A. GHIGRY: *Device for Preventing Draughts and Introduction of Dust and Damp Beneath Doors.*

A device for preventing draughts, dust, and damp passing beneath doors, applicable to existing doors, characterised by a strip of wood arranged with felt, and disposed at the lowermost part of the door, being pushed downwardly when the latter is closed and bearing by its felt upon the floor, thus obturating the bottom of the said door, the device being returned to its initial position when the door is opened.

19,971 of 1903.—O. SMITH: *Permutation Locks.*

This relates to permutation locks, and consists of a device for adjusting the tumblers comprising one or more movable parts set in front of the locking mechanism and having teeth or projections adapted to be engaged by the finger, a casing enclosing said movable parts and having formed in it a falling notch or notches into which one or more of the teeth project and by means of which said teeth and the movable parts aforesaid can be moved by the finger through a predetermined distance and a series of impulses thus communicated to the tumblers.

27,286 of 1903.—G. MEIDINGER: *Centrifugal Fans or Ventilators.*

Centrifugal fans or ventilators, consisting in the employment of a vane wheel provided with a limited number of main vanes, all or a part of which extend to the wheel boss, and at its outer periphery with a ring or crown comprising a large number of pallets or vanes which are narrow in the radial direction, straight or curved, and arranged radially or at an inclination with respect to the wheel radius.

28,086 of 1903.—F. R. STONE AND H. SIMKISS: *Construction of Opening Skylights.*

Skylights of the opening type, consisting in hinging the frame together by curling or turning over the top backs of the inner and outer frame so that the turn-over part or curl of the top back of the outer frame fits into, and is capable of turning in the turn-over part or curl of the top back of the inner frame; the top back of the outer frame being extended forward as one piece to meet the glazing bar.

28,143 of 1903.—J. J. GIBBONS: *Construction of Lock for Doors and the like.*

A lock so constructed that the key is prevented from being withdrawn except when the door, of which it is the fastening, is completely closed and the bolt subsequently shot into the staple.

28,404 of 1903.—L. MOUAT, JUN.: *Fastening Devices for Windows.*

A safety fastening device for windows consisting in the combination of a keeper secured to the meeting rail of the lower sash, having a hinged abutment holding surface at one side thereof, and a suitable stop at its opposite side edge, with a hooked arm pivoted to the upper sash, the end of which is designed to engage the abutment holding surface and keeper, when it is desired to lock both sashes closed, or to fasten to said keeper, when it is desired to open either sash a predetermined distance.

4,675 of 1903.—J. G. WHITE AND CO., LTD., AND J. H. FISHER: *Apparatus or Forms for use in the Construction of Conduits and Pockets or Boxes Specially Applicable as Containers for the Underground Conductors of Electric Traction Systems.*

Apparatus for use in casting conduits for the conductors of electric railways and tramways having underground current supply, said apparatus comprising a set of forms for shaping the walls of the conduits, which forms are made in sections adapted to fit together for casting the walls and to be removed separately through the slot of the slot rails after the walls are cast, and wedging devices for pressing apart the forms for shaping the walls of the conduits, said wedging devices being adapted to be contracted and drawn out of action by a hook or the like engaging in a loop on the wedging device and to be removed by being drawn along the conduit to a point at which insulator pockets are formed at the sides of the conduit, and through which pockets the wedging devices may be extracted after the side pieces of the forms have been removed through the slot of the slot rails.

6,966 of 1903.—H. J. NICKLIN: *Construction of Paving Block or Paving Slab.*

A composite paving block constructed of a number of wood pieces to form the wearing surface or tread, and a concrete or other similar base, the said base and pieces being in a suitable manner held to each other securely.

6,787 of 1903.—G. T. MOORE: *Joint for Sewer Pipes and the like.*

A joint for sewer pipes and the like, consisting in forming a circumferential groove in the outer periphery of the spigot end and a similar groove in the inner side of the socket to form together an annular passage when the pipes are placed in position, with the spigot end of one in the socket end of the other; and an inlet opening communicating with the said passage for the reception of the liquid binding material; and yielding rings or gaskets led into the outer side of the spigot end.

7,166 of 1903.—T. CHARTERIS AND J. B. DUNN: *Construction of Flooring.*

Construction of flooring, consisting of a foundation of girders or concrete or a combination of both, blocks or slabs fitted therein or thereon, screw plugs engaging such blocks or slabs, steel bands stretched over such plugs, joists arranged across such steel bands and connected together by a cross piece, and floor boards secured to such joists.

27,365 of 1903.—C. J. ROY: *Scaffolds.*

A scaffold provided with an exterior portion having openings, a bar having openings and a threaded end and constructed to enter said exterior portion and having openings and a threaded end, devices to enter said openings to retain said parts in the desired relative position, a bracket slidably mounted on said scaffold and a threaded socket or base upon said projection, whereby the scaffold may be extended after adjustment and secured into the plate.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

February 9.—By DRIVER, JONAS, & Co., with CUMBERLAND & HOPKINS (at Leighton Buzzard).

Linslade, Bucks.—Southcott-rd., a freehold building estate, 2 a. 3 r. 19 p. £700
Leighton Buzzard, Beds.—"The Heath Farm," 65 a. 2 r. 24 p., f., y.r. 75*l.* 2,100

By FAREBROTHER, ELLIS, & Co. (at Doncaster).

Bawtry, Yorks.—Portions of the "Bawtry Hall Estate," comprising farms and lands, area about 110 acres; also houses, cottages, etc., f. (in numerous lots) 12,590
Market-pl., the "Crown Hotel," with two houses and shops adjoining, area ¼ of an acre, f. 3,425
Scrooby, Notts.—Impropriate tithes of 95*l.* ... 910

February 10.—By FAREBROTHER, ELLIS, & Co. (at Doncaster).

Austerfield, etc., Yorks.—Portions of the "Austerfield Estate," comprising farms and lands, area about 1,390 acres; also houses, cottages, etc., f. (in numerous lots) 20,130
Bawtry, Yorks.—Station-rd., the "Station Inn," area 2½ acres 1,300

February 11.—By FAREBROTHER, ELLIS, & Co. (at Doncaster).

Fishlake, etc., Yorks.—"The Fishlake," "Sykehouse," and "Thorne" Estates, comprising farms and lands, area about 611 acres, f. (in numerous lots) 11,225

By BAXTER, PAYNE, & LEPPER (at Bromley).

Bromley, Kent.—26, 28, and 30, Pope-rd., f., p. 865

By NORMAN & SON (at Uxbridge).

Sipson, Middlesex.—"The Sipson Home Farm," also workshops, corn stores, etc., area 2 a. 3 r. 3 p., f. 3,000

February 12.—By FAREBROTHER, ELLIS, & Co. (at Doncaster).

Ferry Fryston, etc., Yorks.—Portions of the "Frys'on-pk." and "Pontefract" Estates, comprising farms and lands, area about 1,597 acres, f. (in numerous lots) 13,396
Thoralby, Yorks.—A rent charge of 50*l.* 12*s.* 7½*d.* 870
West Witton, Yorks.—Rent charges of 32*l.* 4*s.* 7½*d.* 520

February 13.—By STEPHENSON & ALEXANDER (at Cardiff).

Rumney, Monmouth.—"Newton Farm," 37 a. 3 r. 19 p., f., y.r. 84*l.* 2,365

February 15.—By THOMAS, PEYER, & MILES.

Llantwit Major, Glamorgan.—"The White Lion" Brewery and Hotel, with cattle yard and mart in rear, f., p. 2,500

February 16.—By DEBENHAM, TEWSON, & Co.

Peckham.—Moncrieff-st., l.g. rents 65*l.*, u.t. 69 yrs., g.r. nil 1,310
Moncrieff-st., l.g.r. 42*l.* 11*s.*, u.t. 69 yrs., g.r. nil 830
Cicely-rd., etc., l.g.r. 18*l.* 10*s.*, u.t. 69 yrs., g.r. nil 380
Cicely-rd., l.g.r. 39*l.*, u.t. 72 yrs., g.r. 21*l.* ... 340
Clayton-rd., l.g.r. 36*l.*, u.t. 72 yrs., g.r. 21*l.* 280
Hampstead.—78, 80, and 82, South Hill-pk., f., y.r. 195*l.* 2,830
Snaresbrook, New Wanstead.—"Woodland Cottage" and ¼ an acre, c., y.r. 70*l.* 1,000

By DUNCAN & KEMPTON.

Hornsey.—81, Duckett-rd., u.t. 89½ yrs., g.r. 6*l.* 10*s.*, e.r. 40*l.* 410
3, Waldegrave-rd., u.t. 75½ yrs., g.r. 6*l.*, y.r. 30*l.* 275

By MAY & ROWDEN.

New Bond-st.—No. 61 (s.), area 2,750 ft., Corporation lease, g.r. 5*l.* 4*s.* 6*d.*, fine 36*l.* 10*s.* 8*d.* 20,250

By A. M. NEWCOMBE.

Cricklewood.—21, Prospect-rd., u.t. 75 yrs., g.r. 5*l.*, w.r. 28*l.* 12*s.* 180

By ROGERS, CHAPMAN, & THOMAS.

Clerkenwell.—11 and 12, Tysoe-st., y.r. 50*l.*; also l.g.r. 6*l.*, u.t. 11½ yrs., g.r. 1*l.* 10*s.* .. 295
Chelsea.—First-st., f.g.r. 49*l.* 10*s.*, reversion in 40 yrs. 1,605
Hasker-st., f.g.r. 80*l.*, reversion in 40 yrs. .. 2,720
Milner-st., f.g.r. 22*l.*, reversion in 40 yrs. .. 750
Milner-st., f.g.r. 7*l.*, reversion in 27 yrs..... 305
Ovington-st., f.g.r. 36*l.*, reversion in 27 yrs. 1,385
Ovington-st., Peppercorn g.r., reversion in 41 yrs. 350
Hasker-st., etc., f.g.r. 4*l.* 5*s.*, reversion in 47 yrs. 405
Milner-st., "The Australian" p.h., Peppercorn g.r., reversion in 41 yrs..... 820
Milner-st., Peppercorn g.r., reversion in 41 yrs. 600
Green-st., Peppercorn g.r., reversion in 40 yrs. 300

By FAREBROTHER, ELLIS, & Co. (at Sheffield).

Great Houghton, Yorks.—"The Great Houghton Estate," comprising farms and lands, area 278 acres f. (in nine lots) 8,555
"The Old Hall Inn" and 11¾ acres, f., y.r. 53*l.* 3,500
Penistone, Yorks.—"Bull House Hall" and Colliery, surface area 149 a. 1 r. 10 p., f.. 5,500
"Bull House Mill and Farm," 45 a. 3 r. 29 p., f. 1,820
Bullace Grange Farm," 33 a. 0 r. 19 p., f.. 2,150
Freehold land, with cottage, etc., 13 a. 2 r. 20 p. 700
"A Shaw Farm," 232 acres, f. 2,000
Tapton, Derby.—"The Tapton Estate," 31 acres, f. (in five lots) 1,180

February 17.—By FOSTER & CRANFIELD.

St. James's.—22, Ryder-st. ("St. James's Palace-chambers"), u.t. 54½ yrs., g.r. 1,121*l.*, y.r. 4,092*l.* 13,000
Stratford.—98, 100, 102, and 104, Maryland-sq., u.t. 84 yrs., g.r. 2*l.*, y.r. 104*l.* 1,030
Battersea.—Ingrave-st., l.g.r. 117*l.* 5*s.*, u.t. 46 yrs., g.r. nil 2,110

By HAMPTON & SONS.

South Kensington.—8, Bolton-gdns., u.t. 57½ yrs., g.r. nil, y.r. 200*l.* 2,800

By MANSELL & ROWE.

Norwood.—6 and 8, Belvedere-rd. (s.), u.t. 48½ yrs., g.r. 16*l.*, y.r. 90*l.* £505
12 and 14, Belvedere-rd., u.t. 47½ yrs., g.r. 12*l.* 10s., y.r. 90*l.* 530

February 18.—By ALLAN BOOTH.

Holloway.—106, Carleton-rd., u.t. 51½ yrs., g.r. 10*l.*, e.r. 75*l.* 750
31, Beacon-hill, u.t. 38½ yrs., g.r. 8*l.* 8s., e.r. 65*l.* 630

By MIDDLETON & CRACKNELL.

Hampstead.—8a, Heath-st., and 1a to 5a, Perrin's-ct. (shops and flats), u.t. 62½ yrs., g.r. 50*l.*, y.r. 228*l.* 4s. 1,050

By G. TROLLOPE & SONS.

Covent Garden.—Garrick-st., f.g.r. 25*l.*, reversion in 39 yrs. 1,020

By FRED VARLEY & SON.

Kingsland.—41, Ware-st. (mission hall, etc.), u.t. 29 yrs., g.r. 6*l.*, y.r. 47*l.* 295
Finsbury Park.—22, Portland-rd., u.t. 55 yrs., g.r. 12*l.* 12s., y.r. 60*l.* 550
88, Wilberforce-rd., u.t. 63 yrs., g.r. 8*l.*, e.r. 50*l.* 445
Crouch End.—106, Crouch-hill, u.t. 64½ yrs., g.r., etc., 11*l.* 10s. e.r. 70*l.* 450

By H. J. BLISS & SONS.

Kennington.—52, Hanover-gdns., u.t. 41 yrs., g.r. 6*l.*, w.r. 41*l.* 12s. 225
Bethnal Green.—112, Green-st. (s.), u.t. 15½ yrs., g.r. 5*l.* 3s., y.r. 40*l.* 130
52 to 60 (even), Chisenhale-rd., f., w.r. 200*l.* 4s. 2,480
Bow.—44, Eglinton-rd., f., w.r. 31*l.* 4s. 455
10 and 12, Chadd-st., f., w.r. 62*l.* 8s. 560

By NEWBON, EDWARDS, & SHEPHARD.

Balham.—30, Oldridge-rd. (s.), f., y.r. 20*l.* 450
56, Bellamy-st., f., y.r. 28*l.* 390
Canonbury.—27, Alma-rd, f., y.r. 40*l.* 650
Holloway.—140 and 142, St. James's-rd. (s.), f., y.r. 84*l.* 1,205
44, 48, and 50, Victoria-rd., f., y.r. 96*l.* 1,155
37 and 39, Victoria-rd., f., y.r. 58*l.* 685
Hoxton.—60 and 61, Napier-st., u.t. 30 yrs., g.r. 28*l.*, y.r. 63*l.* 285
Regent's Park.—35, Munster-sq., and 26, Little Albany-st., u.t. 18½ yrs., g.r. 9*l.* 9s., y.r. 56*l.* 405
King's Cross.—98 and 100, Southampton-st., y.r. 72*l.*, also i.g.r. 7*l.* 5s., u.t. 20½ yrs., g.r. 17*l.* 10s. 405
Stoke Newington.—5, Lancell-st., u.t. 70½ yrs., g.r. 6*l.* 6s., y.r. 35*l.* 340
Bromley-by-Bow.—46 and 48, Byron-st., f., w.r. 57*l.* 4s. 590
Stratford.—66 and 68, Major-rd. (s.), f., w.r. 59*l.* 16s. 470
Forest Gate.—80, 82, and 84, Huddlestone-rd., f., y.r. 92*l.* 1,010

February 19.—By A. J. SHEFFIELD.

Whitechapel.—Old Montague-st., f.g.r. 98*l.*, reversion in 86 years 2,275
Upper East Smithfield.—No. 19 (s.), e.r. 41*l.* 12s. 270

Contractions used in *these lists*.—F.g.r. for freehold ground-rent; l.g.r. or leasehold ground-rent; l.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beer-house; p.h. for public-house; o. for offices; s. for shops; ct. for court.

MEETINGS.

FRIDAY, FEBRUARY 26.

Royal Institution.—Mr. Alexander Siemens on "New Developments in Electric Railways." 9 p.m.
Institution of Civil Engineers (Students' Meeting).—Mr. L. G. Crawford on "Boiler-House Design." 8 p.m.
Sanitary Institute (Lectures for Sanitary Officers).—Dr. A. Wellesley Harris on "Methods of Disinfection." 7 p.m.
Glasgow Architectural Craftsmen's Society.—Mr. Colin Sinclair on "Floor Paving: Wood, Granolithic, Asphalte." 8 p.m.

SATURDAY, FEBRUARY, 27.

Royal Institution.—Right Hon. Lord Rayleigh on "The Life and Work of Stokes," II. 3 p.m.
Sanitary Institute (Demonstration for Sanitary Officers).—Inspection at Tottenham Disinfecting Station and Dust Destructor. 3 p.m.
Builders' Foremen and Clerks of Works' Institution.—Annual Dinner, King's Hall, Holborn Restaurant. 6 p.m.

MONDAY, FEBRUARY 29.

Royal Institute of British Architects.—Special General Meeting and General Business Meeting. (See p. 221 for particulars.) 8 p.m.
Royal Academy.—Professor Aitchison, R.A., on "Vitruvius," I.
Society of Arts (Cantor Lectures).—Mr. C. T. Jacobi on "Modern Book Printing," II. 8 p.m.
Regent-street Polytechnic (University Extension Lectures).—Professor Vivian Lewes on "The Chemistry of Air, Fire, and Water," V. 8 p.m.
Sanitary Institute (Lectures for Sanitary Officers).—Dr. A. Wellesley Harris on "Elementary Statistics." 7 p.m.
Builders' Benevolent Institution.—Committee Meeting. 5 p.m.

TUESDAY, MARCH 1.

Institution of Civil Engineers.—Papers to be further discussed:—(1) "The Construction of Railway Waggons in Steel," by Mr. J. D. Twinberrow; (2) "The Construction of Iron and Steel Railway Waggons," by Mr. A. L. Shackleford; and (3) "Iron and Steel Railway Waggons of High Capacity," by Mr. J. T. Jepson. 8 p.m.
Institute of Sanitary Engineers, Ltd. (Lectures in Practical Sanitary Science).—Mr. N. W. Hoskins on "The Atmosphere and Meteorology." 7 p.m.
Institute of Builders.—Special Finance Committee Meeting. 2.30 p.m. Council Meeting. 3 p.m.

WEDNESDAY, MARCH 2.

Institution of Civil Engineers.—Students' Visit to Inspect the New Stores and Plant for Handling Grain at the Millwall Docks. 2.30 p.m.
Institute of Sanitary Engineers, Ltd.—Mr. Chilvers on "Water-closets in General." 7 p.m.
Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—(1) Inspection at London County Council Common Lodging-house, Parker-street, Drury-lane. 3 p.m. (2) Mr. W. C. Tyndale on "Water: Composition, Pollution, and Purification." 7 p.m.
Edinburgh Architectural Association.—Mr. J. S. Morton on "Scotch Woodwork." 8 p.m.

THURSDAY, MARCH 3.

Royal Academy.—Professor Aitchison on "Vitruvius," II.
Royal Institution.—Professor H. L. Callendar, M.A., F.R.S., on "Electrical Methods of Measuring Temperature," II. 5 p.m.
Carpenters' Hall, London-wall (Free Lectures on Matters Connected with Building).—Mr. C. R. Ashbee, M.A., on "The Workmen of the Middle Ages." 8 p.m.
Society of Ordained Surveyors, Edinburgh (117, *Georges-street*).—Mr. J. L. Wark on "Mutual Gables." 8 p.m.
London Master Builders' Association.—Special Finance Committee Meeting. 4 p.m.

FRIDAY, MARCH 4.

Architectural Association.—(1) Special Meeting to consider whether the day of the Ordinary Meeting shall be changed. (2) Mr. J. W. Simpson on "Schools." 7 p.m.
Sanitary Institute (Lectures for Sanitary Officers).—Mr. W. C. Tyndale on "Calculations, Measurements, and Plans and Sections." 7 p.m.
Junior Institution of Engineers (Westminster Palace Hotel).—Paper by Mr. G. C. Allingham entitled "Some Practical Notes on Electric Storage Batteries." 8 p.m.

SATURDAY, MARCH 5.

Royal Institution.—Right Hon. Lord Rayleigh on "The Life of Stokes," III. 3 p.m.
Sanitary Institute (Demonstrations for Sanitary Officers).—Inspection at the Sewage Works Sutton, Surrey. 3 p.m.
Institute of Sanitary Engineers, Limited.—Visit to the Richmond Main Sewage Works (Mr. W. Fairley, engineer).
British Institute of Certified Carpenters.—Discussion on "Failures in Carpentry and Joinery." 6 p.m.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	1 16 0	per 1000 alongside, in river.
Rough Stocks and Grizzles	1 13 0	" " "
Facing Stocks ...	2 12 0	" " "
Shippers	2 10 0	" " "
Flettons	1 10 0	" at railway depôt.
Red wire Cuts ..	1 13 0	" " "
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire ..	4 4 0	" " "
Do. Bullnose	4 10 0	" " "
Best Stourbridge Fire Bricks....	4 8 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	13 0 0	" " "
Headers	12 0 0	" " "
Quoins, Bullnose, and Flats	17 0 0	" " "
Double Stretchers	19 0 0	" " "
Double Headers..	16 0 0	" " "
One Side and two Ends	19 0 0	" " "
Two Sides and one End	20 0 0	" " "
Splays, Chamfered, Squints .	20 0 0	" " "
Best Dipped Salt Glazed Stretchers and Headers	12 0 0	" " "
Quoins, Bullnose, and Flats	14 0 0	" " "
Double Stretchers	15 0 0	" " "
Double Headers..	14 0 0	" " "
One Side and two Ends	15 0 0	" " "
Two Sides and one End	15 0 0	" " "
Splays, Chamfered, Squints..	14 0 0	" " "
Second Quality White and Dipped Salt Glazed	2 0 0	" less than best.

	s. d.	
Thames and Pit Sand.....	7 3	per yard, delivered.
Thames Ballast	6 0	" "
Best Portland Cement	29 0	per ton, "
Best Ground Blue Lias Lime	20 6	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fire Clay in sacks 27s. 6d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington depôt.....	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms depôt	1 8½	" "

STONE—(*continued*)—

	s. d.	
PORTLAND STONE (20 ft. average)—		
Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf ..	2 1	" "
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf ..	2 2½	" "
	s. d.	
Ancaster in blocks	1 11	per ft. cube, deld. rly. depôt.
Beer in blocks	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks ..	2 4	" "
Red Corsehill "	2 5	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "
YORK STONE—*Robin Hood Quality.*		
	s. d.	
Scappled random blocks	2 10	per ft. cube, deld. rly. depôt.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per foot super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
HARD YORK—		
Scappled random blocks	3 0	per ft. cube "
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides Ditto	3 0	" "
3 in. sawn two sides slabs (random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "
Hopton Wood (Hard Bed) in blocks	2 3	per ft. cube.
" " " 6 in. sawn both sides landings	2 7	per ft. super. deld. rly. depôt.
" " " 3 in. do.	1 2½	" "

SLATES.

in. in.	£ s. d.	
20 x 10 best blue Bangor	13 2 6	per 1000 of 1200 at r. d.
20 x 12 " "	13 17 6	" "
20 x 10 best seconds "	12 15 0	" "
20 x 12 " " "	13 10 0	" "
16 x 8 " " "	7 0 0	"
20 x 10 best blue Portmadoc	12 12 6	" "
16 x 8 best blue Portmadoc	6 12 6	" "
20 x 10 best Eureka unfading green ..	15 2 6	" "
20 x 12 best Eureka unfading green ..	17 2 6	" "
18 x 10 " "	12 10 0	" "
16 x 8 " "	10 5 0	" "
20 x 10 permanent green	11 10 0	" "
18 x 10 " "	9 10 0	" "
16 x 8 " "	6 10 0	" "

TILES.

	s. d.	
Best plain red roofing tiles ..	42 0	per 1000 at rly. depôts
Hip and Valley tiles ..	3 7	per doz. " "
Best Broseley tiles.....	50 0	per 1000 " "
Do. Ornamental tiles	52 6	" " "
Hip and Valley tiles ..	4 0	per doz. " "
Best Ruabon red, brown or brindled do. (Edwards)	57 6	per 1000 " "
Do. Ornamental do.	60 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 0	" " "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 " "
Do. Ornamental do.	54 6	" " "
Hip tiles	4 1	per doz. " "
Valley tiles	3 8	" " "
Best "Rosemary" brand plain tiles	48 0	per 1000 " "
Best Ornamental tiles	50 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 8	" " "
Best "Hartshill" brand plain tiles, sand faced.	50 0	per 1000 " "
Do. pressed	47 6	" " "
Do. ornamental, do.	50 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles.....	3 6	" " "

WOOD.

	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.....	15 10 0	16 10 0
Deals: best 3 by 9.....	14 10 0	15 10 0
Battens: best 2½ in. by 7 in. and 3 in., and 3 in. by 7 in. and 8 in.	11 10 0	12 10 0
Battens: best 2½ by 6 and 3 by 6..	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best
Battens: seconds	0 10 0	" " "
2 in. by 4 in. and 2 in by 6 in. ..	9 0 0	9 10 0
2 in. by 4½ in. and 2 in. by 5 in...	8 10 0	9 10 0
Foreign Sawn Boards—		
1 in. and 1½ in. by 7 in.....	0 10 0	more than battens.
½ in.....	1 0 0	"
Fir timber: best middling Danzig or Memel (average specification)	At per load of 50 ft. 4 10 0	5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in.)....	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 15 0	3 0 0
Pitch-pine timber (30 ft. average)..	3 5 0	3 15 0
JOINERS' WOOD.		
White Sea: first yellow deals, 3 in. by 11 in.	At per standard. 23 0 0	24 0 0
3 in. by 9 in.....	21 0 0	22 10 0
Battens, 2½ in. and 3 in. by 7 in.	17 0 0	18 10 0
Second yellow deals, 3 in. by 11 in.	18 10 0	20 0 0
" " 3 in by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	15 10 0	16 10 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	12 10 0

JOINERS' WOOD.—(*Contd.*)	At per standard. £ s. d.	£ s. d.
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.	18 0 0	19 10 0
Battens	13 10 0	15 0 0
Petersburg: second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.	14 10 0	16 0 0
Battens	11 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 0 0
Do. 3 in. by 9 in.	13 0 0	14 0 0
Battens	10 0 0	11 0 0
White Sea and Petersburg:—		
First white deals, 3 in. by 11 in.	14 10 0	15 10 0
" " 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
" " 3 in. by 9 in.	12 10 0	13 10 0
" " battens	9 10 0	10 10 0
Pitch-pine: deals	16 10 0	20 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	35 0 0	upwards.
Oddments	24 0 0	26 0 0
Seconds, regular sizes	26 10 0	28 10 0
Yellow Pine oddments	22 0 0	24 0 0
Kauri Pine—Planks, per ft. cube	0 3 6	0 5 0
Danzig and Stettin Oak Logs—		
Large, per ft. cube	0 2 6	0 3 6
Small " "	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 7	0 0 8
½ in. do. do.	0 0 6½	—
Dry Mahogany—Honduras, Tabasco, per ft. sup. as inch	0 0 9	0 0 11
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 0
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	17 0 0	21 0 0
American Whitewood Planks—per ft. cube	0 4 0	—
Prepared Flooring—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 1 6
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	0 13 6
¾ in. by 7 in. do. do. do.	0 14 0	0 18 0
1 in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 11 6	0 13 6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 5 0 ..	7 5 0
Compound Girders, ordinary sections	8 2 6 ..	9 5 0
Angles, Tees and Channels, ordinary sections	7 17 6 ..	8 17 6
Flitch Plates	8 5 0 ..	8 15 0
Cast Iron Columns and Stanchions including ordinary patterns	7 2 6 ..	8 5 6

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	7 5 0 ..	7 15 0
Staffordshire Crown Bars, good merchant quality	7 15 0 ..	8 5 0
Staffordshire "Marked Bars"	10 0 0 ..	—
Mild Steel Bars	8 15 0 ..	9 5 0
Hoop Iron, basis price	9 5 0 ..	9 10 0
" " galvanised	17 10 0 ..	—
(*And upwards, according to size and gauge.)		
Sheet Iron (Black)—		
Ordinary sizes to 20 g.	9 15 0 ..	—
" " 24 g.	10 15 0 ..	—
" " 26 g.	12 5 0 ..	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g.	12 15 0 ..	—
Ordinary sizes to 22 g. and 24 g	13 5 0 ..	—
" " 26 g.	14 5 0 ..	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	16 0 0 ..	—
" " 22 g. and 24 g.	16 10 0 ..	—
" " 26 g.	18 0 0 ..	—
Galvanised Corrugated Sheets—		
Ordinary sizes, 6 ft. to 8 ft. 20 g	12 10 0 ..	—
" " 22 g. and 24 g.	13 0 0 ..	—
" " 26 g.	13 15 0 ..	—
Best Soft Steel Sheets, 6ft. by 2ft. to 3 ft. by 20 g. and thicker	11 15 0 ..	—
Best Soft Steel Sheets, 22 g. & 24 g	12 15 0 ..	—
" " " 26 g	14 0 0 ..	—
Cut nails, 3 in. to 6 in.	9 0 0 ..	9 10 0
(Under 3 in., usual trade extras.)		

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3lb. and up	14 5 0 ..	—
Pipe in coils	14 15 0 ..	—
Soil pipe	17 5 0 ..	—
Compo pipe	17 5 0 ..	—
ZINC—Sheet—		
Vieille Montagne ton	26 5 0 ..	—
Silesian	26 0 0 ..	—
COPPER—		
Strong Sheet per lb.	0 0 10½ ..	—
Thin "	0 0 11½ ..	—
Copper nails "	0 0 11 ..	—
BRASS—		
Strong Sheet per lb.	0 0 10 ..	—
Thin "	0 0 11 ..	—
TIN—English Ingots "	0 1 4 ..	—
SOLDER—Plumbers' "	0 0 6½ ..	—
Tinmen's "	0 0 8 ..	—
Plowpipe "	0 0 9 ..	—

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2d. per ft. delivered.
" fourths	1½d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	3½d. " "
" fourths	3d. " "
32 oz. thirds	4½d. " "
" fourths	4d. " "
Fluted sheet, 15 oz.	2½d. " "
" 21 oz.	3½d. " "
¼ Hartley's Rolled Plate	1½d. " "
⅜ " " "	1¾d. " "
½ " " "	2½d. " "

OILS, &c.		£ s. d.
Raw Linseed Oil in pipes or barrels	per gallon	0 1 8
" " in drums	"	0 1 11
Boiled " in pipes or barrels	"	0 1 11
" " in drums	"	0 2 2
Turpentine, in barrels	"	0 3 10
in drums	"	0 4 0
Genuine Ground English White Lead	per ton	19 0 0
Red Lead, Dry	"	19 0 0
Best Linseed Oil Putty	per cwt.	0 7 6
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TERMS OF SUBSCRIPTION.

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TO CORRESPONDENTS.

W. B. S. (Below our limit).

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and not to the Editor.

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is given, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted*. † Denotes *provisionally accepted*.

BENWELL.—For the erection of a greenhouse in Hodgkin-park, for the Benwell and Fenham Urban District Council. Mr. W. P. Pattison, Surveyor, Council Offices, Benwell:—

Greenhouse Plant, Staging, and Heating Apparatus.

W. Richardson & Co., Darlington £111 2 6

Boiler House and Walls.

T. Hutchinson, Elswick-road, Newcastle-on-Tyne 67 17 0

BOSTON (Lincolnshire).—For the erection of a science school at the Grammar School, for the Governing Body. Mr. Jas. Rowell, architect, Market-place, Boston:—

H. W. Parker & Son, Boston* £1,218

BRIDLINGTON.—For erecting four ornamental kiosks, building dwarf wall, fixing iron palisading, etc., upon land in South Cliff-road, for the Property Committee of the Corporation. Mr. E. R. Matthews, C.E., Borough Surveyor, Town Hall:—

Kiosks.

G. Day	£488 15 0	E. Corner	£301 0 0
J. H. Hudson	475 8 0	J. Rennard	340 0 0
G. Grainger	419 13 0	T. Spink	325 0 0
A. A. Booth	439 0 0	J. R. Stork†	318 0 0
W. Moody	388 0 0	G. Storr & Son,	
W. Barnes	359 19 0	King-street*	310 0 0
E. E. Yeomans	359 0 0		

† Withdrawn.

Dwarf Wall.

E. Corner	£135 10 0	J. Rennard	£97 6 3
C. Limon	109 0 0	J. Sawdon, Centre	
W. Barnes	98 0 0	House, Quay-rd.*	86 0 0

Palisading.

Clarkson & Co.	£216 0 0	G. W. Fenly &	
R. Bailey & Son	185 0 0	Son	£138 17 0
J. Rennard	145 0 0	C. Limon, Lincoln-terrace*	136 0 0
E. H. Dale	142 10 0		

BRIGHTON.—For ten double tenement dwellings, for the County Borough:—

Box & Turner	£6,313	Sattin & Evershed	£4,890
H. J. Penfold	5,797	J. & W. Simmonds, Ashford-road, Brighton*	4,575
Jas. Barnes	5,640		
R. Cook & Sons	5,600		
Wm. Taylor	5,567	H. A. Caxton Jay	3,990

BRIGHTON.—For eight shops and houses on the Spa-street area, for the County Borough*:—

Box & Turner	£7,720	J. & W. Simmonds	£6,152
J. Barnes	7,120	Sattin & Evershed, Freshfield-road, Brighton*	5,955
H. J. Penfold	6,897		
R. Cook & Sons	6,800		
Wm. Taylor	6,786		

CHINGFORD.—For making-up, paving, kerbing, etc., Buxton-road, Frederica-road, and Willow-street, for the Urban District Council. Mr. W. Stair, Surveyor, 14, The Parade, Chingford:—

P. Watson, jun.	£3,795 1 2	Victoria Stone Co.	£2,758 0 0
J. Summerfield	3,565 4 4	M. S. Kitering-ham	2,728 8 0
Free & Sons	3,385 0 0	T. Adams	2,720 0 0
Parsons & Parsons	2,942 11 6	W. & C. French, Buckhurst Hill*	2,612 0 0
Harvey Bros.	2,864 0 0		
Griffiths & Co., Ltd.	2,800 0 0		

CROYDON.—For making up the following roads:—Bronson, Dorien, Dupont, and Sydney, in the parish of Merton, for the Croydon Rural District Council. Mr. R. M. Chart, Surveyor, Town Hall, Croydon:—

Harvey Bros.	£3,464	Free & Sons	£3,124
T. Adams	3,350	E. Iles, Mitcham*	3,011

EAST RETFORD.—Accepted for the supply of granite and slag, for the Rural District Council. Mr. T. Henry, Surveyor, Retford:—

Charnwood Granite Co., near Loughborough
Summerson & Co., Cockfield
Ord & Maddison, Darlington
Sommerfeild & Mead, Hull
Groby Granite Co., Leicester
Mount Sorrel Granite Co., near Loughborough
Ellis & Everard, Bardon Hill
F. T. Lazenby, Retford
W. Prestwich, Dronfield
Stanton Ironworks Co., Nottingham
Butterley Iron Co., Derby

} At a schedule of prices.

EBBW VALE (Mon.).—For the erection of five houses and shop, Cwm, for Mr. J. Harrison. Mr. E. N. Johnson, architect, Risca, Mon.:—

Lattey & Co., Ltd.	£2,647 13 2	C. F. Reed	£2,322 0 0
John Charles	2,570 0 0	Williams & Rogers, Cwm*	1,994 15 0

ERITH.—For extension to main switchboard and cable connexions, for the Urban District Council. Messrs. Hawtayne & Zeden, engineers:—

General Electric Co., Ltd., Witton, Birmingham* £440

ERITH.—For three-phase alternator and direct-coupled high-speed enclosed-type steam engine of 500 k.w. capacity, for the Urban District Council. Messrs. Hawtayne & Zeden, engineers:—

British Westinghouse Electrical and Manufacturing Co., Ltd. (Westinghouse-Belliss combination), Trafford Park, Manchester* £3,240

ERITH.—For surface condenser, with steam-driven air and circulating pumps, for the Urban District Council. Messrs. Hawtayne & Zeden, engineers:—

Blake & Knowles Steam Pump Works, 179, Queen Victoria-street, E.C.* £472

ERITH.—For steam, exhaust, feed, air, and circulating, blow-off, and drain pipes, for the Urban District Council. Messrs. Hawtayne & Zeden, engineers:—

Sir Hiram Maxim Electrical and Engineering Co., Ltd., Westminster, S.W.* £806

ERITH (Kent).—For two Lancashire boilers, with fittings, brickwork settings, and steam feed pump, for the Urban District Council. Messrs. Hawtayne & Zeden, engineers, 9, Queen-street-place, London:—

Yates & Thom, engineers, Blackburn £2,285

FARMFIELD.—For two contact beds, sump tank, and small machinery house, etc., in connexion with sewage disposal works, at Farmfield Reformatory, for the London County Council:—

J. Cracknell	£692	Haslemere Builders	£536
R. Wallace	636	Foster Brothers	510
S. Redhouse, sen.	625	R. Cook & Sons, Crawley*	446
Potter Bros.	548		

[The architect's estimate comparable with these tenders amounts to £630.]

GRIMSBY.—For the erection of a store, Fish Docks, Grimsby, for the United Steam Fishing Co., Ltd. Mr. E. Goodhand, architect, Osborne-chambers, Grimsby:—

Gilbert & Kirton	£503 10 0	J. H. Thompson & Sons	£477 0 0
G. Cook	492 16 9	G. & J. Smith	464 0 0
Hewins & Goodhand	489 0 0	J. Markham, 87, Cromwell-rd.*	425 15 0
W. Ion	480 0 0		

[All of Grimsby.]

HURST.—For roadworks and conversion of closets to water carriage system, King-street, Hurst, near Ashton, for the Hurst Urban District Council. Mr. S. Shirt, Surveyor, Council Offices, King-street, Hurst :—

E. Marshall & Sons, Cricket's-lane, Ashton-under-Lyne..... £114 3 0

HURST.—For sewering and gullying Halifax-street and Elizabeth-street, Hurst, near Ashton-under-Lyne, for the Urban District Council. Mr. S. Shirt, Surveyor, Council Offices, King-street, Hurst :—

C. & J. Matley, Russell-street, Ashton-under-Lyne £126 18 0

KENDAL.—For 1,134 yards lineal of surface water sewers, for the Corporation. Mr. R. Hampton Clucas, C.E. :—

F. Millward & Co.	£378 8 10	W. Barrick	£297 14 0
W. Canadice	342 0 0	J. Burn	263 10 6
R. Woodburn	317 0 0	T. & W. Dicken, Kendal*	240 11 0

KILDARE.—For the erection of an hotel, for Miss E. Talbot. Mr. F. Bergin, architect, 36, Westmoreland-street, Dublin :—

Lynch & Egan	£3,450 0 0	Jas. Donovan	£3,200 0 0
Mackey & Son	3,434 0 0	Patrick Hanway	3,150 0 0
Payne Bros.	3,411 12 5	Peter Byrne	2,960 0 0
James P. Pile	3,350 0 0	John Reid, Malahide*	2,700 0 0
D. & G. Carbery	3,305 0 0		
J. Pemberton & Son	3,240 0 0		

LEYTON.—For the supply of road materials, for the Leyton Urban District Council. Mr. W. Dawson, M.Inst.C.E., Town Hall, Leyton :—

W. Manders, Leyton : Indurated stone, 5½d. per ft. super. ; laying stone paving, 10d. per yd. super.

Adamant Stone and Paving Co., Ltd., Palace-chambers, Westminster : Adamant stone, 6d. per ft. super.

L. Sommerfeld, 2, Fowkes-buildings, Great Tower-street, E.C. : Guernsey granite from the Crown Quarries, Alderney, Port of Guernsey, 2 in. 12s. 10d., 1½ in. 13s. 6d. per ton (1,000 tons) ; Guernsey granite chippings, 9s. 3d. per ton.

W. G. Harris, 41, Albert-road, Stratford : Hard core, 2s. 6d. per cubic yard ; flints, 6s. 10d. per cubic yard (3,000 yards chalk flint, balance pit ditto) ; Thames ballast, 5s. 6d. per cubic yard ; Thames sand, 7s. 6d. per cubic yard.

W. Griffiths & Co., Ltd., Hamilton-house, Bishopsgate-street, E.C. : Guernsey granite, 2 in. 13s. 7d., 1½ in. 14s. 1d. per ton (5,000 tons) ; Guernsey granite chippings, 10s. per ton ; Norway pitchers, 5 in. by 7 in. 35s. 6d., 4 in. by 6in. 31s., 4 in. by 4 in. 36s. per ton ; kerb, 12 in. by 8 in., 1s. 5d. per ft. run.

LONDON.—For five detached houses in Dollis-avenue, Finchley, N. Messrs. Bennett & Richardson, architects, Finchley, N. :—

J. Phœnix* £6,000

LONDON.—For residence for Mr. W. Fowler, on Wills'-road, Mill Hill, N.W. Messrs. Bennett & Richardson, architects and surveyors, 2, Broadway, Finchley, N. Quantities by the architects :—

Mattock Bros.	£2,290	J. Bentley	£2,126
F. Gough & Co.	2,154	W. Tout	2,090
G. Godson & Sons.	2,150	J. Phœnix	2,090

LONDON.—For conversion of villas into shop (Bon Marche), Finchley, N., for Messrs. Boyce. Messrs. Bennett & Richardson, architects and surveyors, 2, Broadway, Finchley, N. :—

C. Plowman, Ltd.	£575 0	T. Cooper	573 0
G. Clarke	£573 10	Shewery & Sons*.	560 0

Shop front, £225.

LONDON.—For residence, Freston Tower, Hendon-avenue, Finchley, N., for Mr. Jesse Hawes. Messrs. Bennett & Richardson, architects and surveyors, 2, Broadway, Finchley, N. Quantities by the architects :—

Jesse Phœnix	£3,690	Patman & Fotheringham, Ltd.*	£3,173
C. J. Newby & Bros.	3,657	W. R. Williams	3,145
H. Roffey	3,487	G. Godson & Sons	3,064
Colls & Sons	3,426	F. Gough & Co.	3,054
J. Grover & Son	3,390	W. Lawrence & Son.	2,984
W. Tout	3,250	Edwards & Medway :	2,970
Mattock Bros.	3,190	Too late.	

LONDON.—For the erection of a cottage for the resident engineer at the Brook Hospital, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer and Surveyor to the Board :—

E. Proctor & Son	£1,090 0 0	G. Wales & Co., Ltd.	£730 0 0
G. H. Walker	1,027 12 8	H. Kent	680 0 0
A. J. Glock	855 17 6	Enness Bros.	673 0 0
J. F. Holliday	820 0 0	Thomas & Edge	650 0 0
W. E. Champion	810 0 0	T. Cole, 125, Offord-road, Barnsbury, N.*	548 0 0
J. Pratt	785 0 0		
Terry Building Co.	735 0 0		

[The Engineer's estimate was £470.]

LONDON.—For the erection of a cottage for the resident engineer at the Grove Hospital, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer and Surveyor to the Board :—

G. H. Walker	£914 2 4	Enness Bros.	£715 0 0
A. J. Glock	880 12 0	Thomas & Edge	700 0 0
J. F. Holliday	799 0 0	H. Kent	665 0 0
T. Pearce	777 0 0	W. & C. Brown	665 0 0
J. Pratt	755 0 0	W. J. Coleman & Co.	584 0 0
G. Wales & Co., Ltd.	750 0 0	T. Cole, 125, Offord-road, Barnsbury, N.*	508 0 0
R. E. Shaw	730 0 0		
Terry Building Co.	723 0 0		

[The Engineer's estimate was £480.]

LONDON.—For removal of screen refuse at the Deptford pumping-station, for the London County Council :—

James Paton & Son* .... 2s. 10d. per cubic yard.

LONDON.—For Jarrah wood blocks, creosoted deal blocks, pitch, and granite kerb, Cambridge-road improvement, Bethnal Green-road, and Green-street, for the Metropolitan Borough of Bethnal Green :—

Wood Blocks.

	Jarrah, per thousand.		Creosoted Yellow Deal, per thousand.	
	9×5×3	9×4×3	9×5×3	9×4×3
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
W. W. Howard & Co., 3, Lloyd's-avenue, Fenchurch-street	—	—	7 6 6*‡	5 18 6
Improved Wood Pavement Co., 46, Queen Victoria-street, E.C.	11 9 6*§	9 6 6*‖	7 15 0	6 7 6

‡ 80,000. § 150,000. ‖ 40,000.

Kerb.

	12in. × 8in Guernsey Flat Kerb (straight).	12in. × 8in Aberdeen Flat Kerb (straight).	12in. × 8in Guernsey Flat Kerb (circular).	12in. × 8in Aberdeen Flat Kerb (circular).	6in. × 12in Guernsey Edge Kerb (straight).	6in. × 12in Aberdeen Edge Kerb (straight).	6in. × 12in Guernsey Edge Kerb (circular).	6in. × 12in Aberdeen Edge Kerb (circular).
	Per ft. s. d.	Per ft. s. d.	Per ft. s. d.	Per ft. s. d.	Per ft. s. d.	Per ft. s. d.	Per ft. s. d.	Per ft. s. d.
A. & F. Manuelle	2 0	2 6	2 2	2 8	1 9	2 1	1 11	2 3
Fry Bros.	2 3	—	2 6	—	2 0	—	2 3	—
W. Griffiths & Co., Ltd., 35-39, Hamilton-house, Bishopsgate-street Without, E.C.	1 11* 1,600 ft.	2 2½	2 1* 400 ft.	2 5½	1 8* 400 ft.	2 0½	1 10*	2 3½ 200 ft.‡
John Fyfe	—	2 3	—	2 6	—	2 1	—	2 4
J. Mowlem & Co.	2 2	2 7	2 5	2 10	1 10	2 2	2 1	2 5
B. Nowell & Co.	2 2	2 7½	2 4	2 9½	1 10½	2 2½	2 0½	2 4½

‡ 200 ft.

Pitch (Cambridge-road Improvement).

	Per Ton.		Per Ton.
Dussek Bros. & Co.	£2 17 6	Grindley & Co., Ltd.	£2 15 0
J. Smart	2 13 0	E. Catchpole & Sons	2 7 6
Burt, Boulton, & Haywood, Ltd., 64, Cannon-street, E.C.*	2 6 6	A. J. Dickinson	2 10 0

LONDON.—For boiler-feed pumps, Greenwich electricity generating station, for the London County Council :—

	£ s. d.	£ s. d.
Mather & Platt, Ltd.	8,483 10 0	—
Baker's Patent Appliances Co., Ltd.	6,734 16 6	—
The Electrical Mining Co., Ltd.	6,691 10 0	—
Crow, Harvey, & Co. (two tenders)	6,680 10 0	& 6,980 10 0
The Rhodes Electrical Manufacturing Co.	6,580 2 0	—
R. W. Blackwell & Co., Ltd. (three tenders)	5,312 2 0	to 5,470 0 0
The Worthington Pump Co., Ltd.	5,161 14 0	—
Worth, McKenzie & Co., Ltd.	5,156 0 0	—
Henry Berry & Co., Ltd.	5,022 0 0	—
Arthur Koppel	5,018 7 0	—
Ernest Scott, Mountain, & Co. (two tenders)	4,788 14 0	& 5,088 14 0
W. H. Bailey & Co., Ltd. (two tenders)	4,731 10 0	& 4,887 0 0
Mirlees, Watson, & Co., Ltd. (two tenders)	4,634 14 0	& 4,744 14 0
The Coalbrookdale Iron Co., Ltd.	4,580 15 0	—
The Goodfellow Engineering Co., Ltd.	4,459 9 6	—
The British Thomson-Houston Co., Ltd. (two tenders)	4,453 0 0	& 4,456 4 0
Pratchitt Bros.	4,380 19 0	—
Andrew Bartclay, Sons, & Co., Ltd. (two tenders)	4,357 0 0	& 4,488 8 0
The British Westinghouse Electric and Manufacturing Co., Ltd. (seven tenders)	4,255 18 0	to 5,792 6 0
Hunter & English	4,174 15 0	—
The Lancashire Dynamo and Motor Co., Ltd. (four tenders)	4,157 11 0	to 4,978 1 0
Johnson & Phillips (four tenders)	3,977 18 0	to 4,125 0 0
Frank Pearn & Co., Ltd.	3,957 10 0	—
The Blake & Knowles Steam Pump Works (three tenders)	3,936 0 0	to 5,171 10 0
The Campbell Gas Engine Co., Ltd. (two tenders)	3,751 9 5	& 4,405 10 6
Bruce Peebles & Co., Ltd.	3,751 0 0	—
The Phœnix Dynamo Manufacturing Co., Ltd. (three tenders)	3,710 19 6	to 3,876 1 6
Bever, Dorling, & Co., Ltd.	3,658 15 6	—
John Cochrane & Co., Glasgow*	3,618 0 0	—
J. G. Moore	3,550 0 0	—
C. A. Musker, Ltd.	3,545 0 0	—
Lowmoor Iron Co., Ltd.	3,410 4 0	—
J. C. Lyell & Co. (incomplete)	3,030 0 0	—

LONDON.—For railway turntables, Greenwich electricity generating station, for the London County Council :—

J. Musgrave & Sons, Ltd.	£2,149 0 0
R. Hudson	1,393 0 0
do.	1,253 0 0
Coalbrookdale Co., Ltd.	1,239 0 0
Whessoe Foundry Co., Ltd.	1,050 0 0
J. & F. Howard	1,050 0 0
J. Hitchen & Son	1,018 10 0
A. Penney & Co.	910 0 0
T. Larmuth & Co.	910 0 0
Heenan & Froude, Ltd.	875 0 0
Isca Foundry Co.	857 10 0
Dick, Kerr, & Co., Ltd.	854 0 0
Hurst, Nelson, & Co., Ltd.	840 0 0
Cowans, Sheldon, & Co., Ltd.	808 10 0
Ransomes & Rapier, Ltd., London*	805 0 0
Patent Shaft and Axletree Co.	791 0 0
Graham, Morton, & Co.	721 0 0

: Not to specification.

LONDON.—For electric light installations, Deptford and Old Kent-road fire stations, for the London County Council :—

Deptford Station.

National Electric Construction Co., Ltd.	£293 19 6
Barlow & Young	280 0 0
Laing, Wharton, & Cunnington	261 9 6
Drake & Gorham, Ltd.	254 10 0
W. H. Johnson	251 19 0
Tyler & Duncan	240 0 0
Oliver, Clarke, & Co.	240 0 0
F. J. Coleby & Co.	238 10 0
L. Sunderland & Co.	238 0 0
Duncan, Watson, & Co.	226 0 0
A. H. Marshall & Co.	210 0 0
Alliance Electrical Co., Ltd.	198 7 0
F. Hodgson & Co., 24, Queen Victoria-street, E.C.*	185 17 0

Old Kent-road Station.

National Electric Construction Co., Ltd.	£278 2 6
Barlow & Young	260 0 0
Drake & Gorham, Ltd.	241 10 0
Laing, Wharton, & Cunnington	240 9 0
Oliver, Clarke, & Co.	239 0 0
F. J. Coleby & Co.	227 0 0
Tyler & Duncan	225 0 0
L. Sunderland & Co.	223 0 0
W. H. Johnson	210 17 0
A. H. Marshall & Co.	206 0 0
Duncan, Watson, & Co.	202 0 0
Alliance Electrical Co., Ltd.	180 15 0
F. Hodgson & Co., 24, Queen Victoria-street, E.C.*	157 0 0

LONDON.—For the supply of 4,000 loads of West Australian Jarrah timber, for the Lambeth Borough Council. Mr. H. Edwards, Borough Engineer, 346, Kennington-road, S.E. :—

	Per load. £ s. d.	Quantity. Loads.	Date of Delivery. 1904.
Millar's Karri & Jarrah Co., Ltd., 72, Bishopsgate-st. Within, E.C.	*6 4 6	4,000	As required.
A. & F. Manuelle	6 13 9	650	During May
		650	,, July
		650	,, Aug. and Sept.
W. Griffiths & Co., Ltd.	6 15 6	650	May
		650	,, July
Acme Wood Flooring Co., Ltd.	6 17 6	4,000	As required.
Churchill & Son	7 0 0 plus ½ per cent. brokerage.	4,000	As required.

LONDON.—For the outfit of the Shipman-road Schools, Custom House, E., for the Education Committee. Mr. W. Jacques, Architect to Committee, 2, Fen-court, Fenchurch-street, E.C. :—

Wrinch & Sons	£1,550 0 0
Hammer & Co.	1,267 4 0
Unity Wood & Iron Co.	1,250 0 0
London School Furniture Co.	1,188 16 10
J. D. Bennett	1,150 11 10
Educational Supply	1,099 0 0
Bennett Furnishing Co.	1,025 12 0
North of England S. F. Co.	1,018 7 1
Fisher, Son, & Weaver	974 0 0
Wake & Dean, London*	890 0 0

LONDON.—For residence, Dollis-avenue, Finchley, N., for Mr. Ernest Prater. Messrs. Bennett & Richardson, architects, Finchley, N. :—

Mattock Bros.	£1,075	J. Phœnix*	£875
Steed	937		

LONDON.—For The Retreat, Dollis-avenue, Finchley, N., for Mr. E. Drummond Coates. Messrs. Bennett & Richardson, architects, Finchley, N. :—

E. Denman	£830	J. Phœnix*	£720
C. W. Scott	825		

TENDERS.—*Continued on page 240.*

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITION.

Nature of Work.	By whom required.	Premiums.	Designs to be delivered
*Proposed Memorial Building	Eton College	Not stated	No date.

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., supplied by	Tenders to be delivered
Saddle Tank Locomotive, Dalmuir Sewage Works	Glasgow Corporation	J. Lindsay, City-chambers, Glasgow	Feb. 25
Additions to Electricity Generating Stn., Valley-rd.	Bradford Corporation	Mawson & Hudson, Architects, Exchange-buildings, Bradford	Feb. 26
Bakery, Stables, Byre, Shed, etc.	Grangemouth Co-operative Soc., Ltd.	Wilson & Tait, Architects, 9, Armfield-place, Grangemouth	do.
Wesleyan Church and Schools, Widnes	The Trustees	C. W. D. Joynson, Architect, Wednesbury	Feb. 27
C.I. Water Pipes	Hythe Corporation	C. Jones, Borough Surveyor, Hythe, Kent	do.
Materials	Halifax Corporation	J. Lord, Borough Engineer, Town Hall, Halifax	Feb. 29
Painting, etc., Police Station, Harrison-road	do.	do.	do.
Brick Culvert in New Bank	do.	do.	do.
Materials, Electricity Committee	Salford Borough Council	Borough Electrical Engineer's Office, Frederick-road, Pendleton	do.
Oils, Varnishes, etc. (Tramways)	Sheffield Corporation	A. R. Fearnley, Tramways Department, Town Hall, Sheffield	do.
Sewers, Knaresbrook and Leeds Roads	Harrogate Corporation	F. Bagshaw, Borough Engineer, Municipal Offices, Harrogate	do.
Six Houses at Beddan, near Caerphilly		A. O. Evans, Architect, Pontypridd	do.
Diversion of Wellington-road, etc.	Cal. Ry. Co. & G.N. of Scotld. Ry. Co.	P. M. Barnett, C.E., 80, Guild-street, Aberdeen	do.
Reconstruction in Steel, Guild-st. Bridge, Aberdeen	do.	do.	do.
Branch Railway and Siding, near High Glengall	Ayr District Asylum	A. Stevenson, C.E., 14, Cathcart-street, Ayr	do.
Annual Contracts	Southend-on-Sea Corporation	E. J. Elford, Borough Surveyor, Southend-on-Sea	do.
Materials	Esher and the Dittons U.D.C.	A. J. Henderson, Eng., C'cil Offices, Brabant Villa, Thames Ditton	do.
Street Works, North-street, Didsbury	Wellington U.D.C.	A. H. Mountain, Engineer, Town Hall, Wellington, Manchester	do.
Bakers' Stables, Cauldwell-hall-road, Ipswich	Ipswich Indust. Co-op'tive Soc., Ltd.	F. E. L. Harris, A.R.I.B.A., 1, Balloon-st., Manchester	do.
Four Houses, etc., High-street, Hanging Heaton		J. H. Brearley, Architect, Branch-road, Batley	do.
Class-rms., etc., Westg'te Con. Schl., Heckmondwike		H. Stead, Architect, Heckmondwike	do.
Broken Stone and Gravel	Penarth U.D.C.	E. J. Evans, Surveyor, 9, Quay-street, Cardiff	do.
Fire Station, etc., Borough-road	Darlington Corporation	G. Winter, Borough Surveyor, Town Hall, Darlington	do.
Materials	Great Central Railway Co.	A. W. Longden, Cornwell-street, Ogden-lane, Openshaw	Mar. 1
Cemetery Chapel, Lodge, Gates, etc.	Wellingborough U.D.C.	Talbot, Brown, & Fisher, Architects, Burystead-pl., Wellingboro'.	do.
Forming Roads, etc.	do.	Sharman & Archer, Market-place, Wellingborough	do.
Painting, etc., Borough Surveyor's Office	Hertford Corporation	Borough Surveyor's Office, Hertford	do.
Painting Swimming Baths, Hartham	do.	do.	do.
Furnishing Union Offices and Infirm Block	Ecclesall Bierlow Guardians	T. Smith, Union Offices, The Edge, Sheffield	do.
Additions to Residence, Savile Park, Halifax		G. Buckley & Son, Architects, Tower-chambers, Halifax	do.
Stores	Derby Borough Council	J. Ward, Borough Surveyor, Municipal Offices, Derby	do.
Dust Destructor and Electricity Supply Extension	Bermondsey Borough Council	Town Hall, Spa-road, Bermondsey	do.
430 Tons of British Steel Bridge Girders	G.W. Railway Co.	Engineer, Paddington Station, London	do.
650 Tons of Broken Stone	Ivybridge U.D.C.	W. R. Parker, Surveyor, Ivybridge	do.
Bed for Engine at Electricity Works	Halifax Corporation	J. Lord, Borough Engineer, Town Hall, Halifax	do.
Painting, etc., Methodist Chapel, Adwalton		The Chapel	do.
Alterations to Boiler House, Gayton	King's Lynn Corporation	H. J. Weaver, Borough Surveyor, Town Hall, King's Lynn	do.
Five houses, Fulford, York	Mr. G. Wood	A. H. Everist, Architect, 8, New-street, York	do.
Savick Bridge Works, Preston, Lancs.	Lancashire County Council	County Bridgemaster's Office, Preston	do.
Materials	Chingford U.D.C.	H. Bird, Clerk, 14, The Parade, Chingford, Essex	do.
Annual Contracts	Sutton (Surrey) U.D.C.	C. C. Smith, Municipal Offices, Sutton, Surrey	Mar. 2
Paving Works, Lennox-road	Hove Corporation	H. H. Scott, Borough Surveyor, Town Hall, Hove	do.
Paving Works and Cab Stands, Lansdowne road	do.	do.	do.
Making-up Park and Dean Roads, Hounslow	Heston and Isleworth U.D.C.	P. G. Parkman, Engineer, Town Hall, Hounslow, W.	do.
Watson's-lane Sewers	do.	do.	do.
Granite, etc.	Doncaster R.D.C.	W. R. Crabtree, Highway Surv., Union Offices, High-st., Doncaster	do.
Two Houses, Morton-terrace, Wigton-road, Carlisle	Miss Howe	Johnstone Bros., Architects, 39, Lowther-street, Carlisle	do.
Four cottages at Nunthorpe	N.E. Railway Co.	W. Bell, Architect to the Company, York	do.
Alterations to Parish Church, Brandon		W. Morton, 27, John-street, Sunderland	do.
Paving and Flagging Streets	Leeds Corporation	City Engineer's Office, Municipal Buildings, Leeds	do.
Making-up Falmer-road and Cross-road	Enfield U.D.C.	R. Collins, Surveyor, Public Offices, Enfield	do.
Additions to Porter's Lodge at Workhouse, Crumpsall	Manchester Guardians	A. J. Murgatroyd, Architect, 23, Strutt-street, Manchester	do.
Low-water Swimming Pond	St. Andrews Town Council	W. Watson, Burgh Surveyor, St. Andrews	do.
Locks for Craiglockhart Poorhouse	Edinburgh Parish Council	A. Ferrier, Parish Council-chambers, Castle-terrace, Edinburgh	do.
Open-air Swimming Baths	Bristol Corporation	T. H. Yabbicorn, City Engineer, 63, Queen-square, Bristol	do.
Workshops, Shotton Colliery	Horden Collieries, Ltd.	G. Wells, Shotton Colliery	Mar. 3
C.I. Water Pipes	Hipperholme U.D.C.	G. W. Thompson, Surveyor, Council Offices, Hipperholme	do.
Stores	Gas and Electricity Com., Stockport	Engineer, Gasworks, Portwood, Stockport	do.
Road Materials and Cartage	Eastbourne R.D.C.	T. E. Varley Kirtlan, Clerk, 92, Terminus-road, Eastbourne	do.
Public Conveniences, Waterloo Park	Norwich Corporation	A. E. Collins, City Engineer, Guildhall, Norwich	do.
*Triennial Contracts for Repairs	Receiver for Metrop. Police District	Police Surveyor, New Scotland Yard, S.W.	do.
Shed at Deepwater Berths	Sligo Harbour Commissioners	Office of Commissioners, Town Hall, Sligo	do.
Wesleyan Church, Mawdesley, near Ormskirk	Trustees	J. Jameson Green, Architect, 19, South John-street, Liverpool	Mar. 4
Materials	Estates Department, Bristol Corp.	City Valuer, Council House, Brond-street, Bristol	do.
New Fryston Waterworks	Pontefract R.D.C.	J. Waugh, C.E., Sundridge-chambers, Bradford	do.
One-story Building at Workhouse, Gravelly Hill	Aston Guardians	Whitwell & Son, Architects, 23, Temple-row, Birmingham	do.
Granite	Market Harborough R.D.C.	C. Burgoine, Clerk, Market Harborough	do.
House, Maryport, Cumberland	J. Hodgson	C. Eaglesfield, Architect, Maryport	do.
Five Houses and Shop in Poyser-street, Wrexham		J. Pinder, C.E., 98, Ruabon-road, Wrexham	do.
Building Materials, etc.	Cardiff Guardians	A. J. Harris, Clerk, Queen's-chambers, Cardiff	do.
Taking-down & Rebldg. Tabor Ch'l., Cefn, nr. Merthyr		T. Roderick, Architect, 50, Glebeland, Merthyr	do.
Library and Reading-room at Resolven, near Neath		J. Cook Rees, Architect, Neath	do.
Material	Belper R.D.C.	R. C. Cordon, Surveyor, Duffield, near Derby	Mar. 5
Goods and Materials	Colchester Corporation	H. Goodyear, Borough Engineer, Town Hall, Colchester	do.
Derbyshire Lime	do.	do.	do.
Granite	Billesdon R.D.C.	W. E. Richardson, Clerk, 18, New-street, Leicester	do.
Materials	Shardlow R.D.C.	J. S. Wooddisse, Weston-on-Trent, Derby	do.
Disinfectants	Rotherham R.D.C.	B. Hey, Surveyor, 29B, High-street, Rotherham	do.
Nightsoil Removal	do.	do.	do.
Granite, Limestone, and Slag	do.	R. Bradbury, District Surveyor, 29B, High-street, Rotherham	do.
A Well, and Boring and Lining	Thame U.D.C.	J. Taylor, Sons, & Santo Crimp, 27, Gt. George-st., Westminster.	do.
Water Supply, Contract No. 2	Kidderminster Corporation	Willcox & Raikes, Eng., Union-ch., 63, Temple-row, Birmingham.	do.
Materials	South Shields Corporation	S. E. Burgess, Borough Engineer, Chapter-row, South Shields	do.
25 Tons of Pig Lead, Masham Station, N.E. Ry. Co.	Harrogate Corporation	E. W. Dixon, Engineer, 14, Albert-street, Harrogate	do.
Stores, etc.	Sanitary Committee, Leeds	G. Darley, Superintendent, Dock-street Depot, Leeds	do.
Sawdust and Shaving Collecting Plant	Manchester Tramways Committee	J. M. M'Elroy, Tramways Department, 55, Piccadilly, Manchester	do.
Woodworking Machinery	do.	do.	do.
Quarrying, Laying, etc., Materials	Castle Ward R.D.C.	D. Hope, Surveyor Ponteland, Newcastle-on-Tyne	do.
Broken Whinstone	do.	do.	do.
Alterations, etc., to Schools, Castle-street	Abergavenny School Board	E. A. Johnson, F.R.I.B.A., Architect to Board, Abergavenny	do.
Alterations, etc., to Schools, Hereford-road	do.	do.	do.
Two Houses, Settle-street, Millom		Settle & Brundrit, Architects, Ulverston	do.
Administration Bldgs. at Bunker's Hill, Whitley-rd.	Thornhill U.D.C.	S. W. Parker, Surveyor, Council Offices, Thornhill, Yorks	do.

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, &c., supplied by	Tenders to be delivered
Making Bricks	Cwmgorse Brickworks Co.	S. Jenkins, Cwmgorse Farm, Gwaun-cae-Gurwen, Glamorganshire	do.
Pulling-d'n, Rebldg. Crown & Cannon Inn, Winlaton	Exors. of late G. Parker	J. G. Crone, Arch., 21, Grainger-street West, Newcastle-on-Tyne	do.
Repairs to Inner Basin of Kilkeel Harbour	.....	J. Heron, County Surveyor, Court House, Downpatrick	do.
*Annual Contracts	M.B. Stepney	Borough Engineer, 15, Great Alie-street, Whitechapel, E.	do.
Road Materials	St. Helen's Corporation	G. J. C. Broom, Borough Surveyor, St. Helen's, Lancs.	do.
Forty Glazed Doors	Wimbledon Public Libr. Committee	H. W. Bull, Librarian, Wimbledon	Mar. 4
Granite Setts, Ballast, and Cement	Southampton Corporation	J. A. Crowther, Borough Engineer, Municipal Offices, Southampton	Mar. 4
Granite for Roadways	Oxendon R.D.C.	W. J. Smith, Coventry-road, Market Harborough	do.
New Streets	Hebburn U.D.C.	H. Paterson, Surveyor, Argyle-street, Hebburn	do.
Annual Contracts	Finchley U.D.C.	E. H. Lister, Council Offices, Church End, Finchley	do.
Materials, Newcastle-on-Tyne Tramways	Tramways Committee	Tramway Department, Manors, Newcastle-on-Tyne	do.
2,000 Tons of Slag	Clown R.D.C.	E. H. Barber, Surveyor, Hollin-hill, Clown, Chesterfield	do.
Steel Sleepers and Keys, Uganda Railway	Crown Agents for the Colonies	Office of the Crown Agents, Whitehall-gardens, London, S.W.	do.
Taking Down Cottages, etc., Child.'s Home, Park-rd.	Bradford Guardians	F. Holland, Eng. & Arch., 11, Parkinson's-ch., Hustlergate, Bradf'd.	do.
Stores	Huddersfield Gas Committee	E. A. Harman, Engineer, Gasworks, Huddersfield	do.
Residence, Lodge, Cottage, and Stable, at Lightcliffe	.....	J. F. Walsh & G. Nicholas, Archs., Museum-chambers, Halifax	do.
Power and Lighting Circuits, etc., Stavordale-road	Corp. Weymouth & Melc'be Regis	R. N. Howard, Town Clerk, Municipal Offices, Weymouth	do.
Electricity Meters	do.	do.	do.
Carnegie Public Library, West Park, Anlaby-road	Hull Corporation	J. H. Hirst, City Architect, Town Hall, Hull	do.
Cement, Broken Stone, etc.	Manchester Corporation	J. M. M'Elroy, Corporation Tramways, 55, Piccadilly, Manchester	do.
Tramway Stores	do.	do.	do.
Little Town Bridge Works, Winchester	.....	W. J. Taylor, County Surveyor, The Castle, Winchester	do.
Redding Sewerage and Sewage Disposal Works	Eastern District Committee, Stirling	Warren & Stuart, Engineers, 94, Hope-street, Glasgow	do.
Street Works, Jenkins-terrace, Abergwynfi	Glyncorrwg U.D.C.	W. P. Jones, Surveyor, Council Offices, Cymmer, Port Talbot	Mar.
Annual Contracts	Shoreditch Borough Council	H. M. Robinson, Shoreditch Town Hall, Old-street, E.C.	do.
Fire Alarms and Telephones, Caterham Asylum	Metropolitan Asylums Board	Office of Board, Embankment, London, E.C.	do.
Engineers' Tools, etc., Joyce Green Hosp., Dartford	do.	do.	do.
Rolling Stock, etc.	South Indian Railway Co.	H. W. Notman, 55, Gracechurch-street, London, E.C.	do.
Repair of Private Roads	Croydon Corporation	Borough-road Surveyor's Office, Town Hall, Croydon	do.
Church, Cark-in-Cartmel	Trustees of Wesleyan Church	Sames & Henshaw, Arch., Oxford-chambers, Abbey-rd, Barrow	do.
Sewer Pipes	Bath Corporation	City Surveyor, Bath	do.
10, 20, and 40 ft. Spans	Secretary of State for India	Director-General of Stores, India Office, Whitehall, S.W.	do.
Cast-iron Pipes (Gas Department)	Glasgow Corporation	A. Wilson, Gas Engineer, 45, John-street, Glasgow	do.
*Supply of Waterproof Clothing	West Ham Borough Council	Borough Engineer, Town Hall, Stratford, E.	do.
*Refuse Destructor Buildings	Bromley Borough Council	Borough Engineer, Bromley, Kent	do.
Materials	Bingham R.D.C.	R. H. Beaumont, Clerk, Market-place, Bingham	Mar. 9
6,120 Yards of Sewers	Drighlington U.D.C.	J. Waugh, Engineer, Sunbridge-chambers, Bradford	do.
Plate Girder Deck Spans	East India Railway Co.	C. W. Young, Nicholas-lane, London, E.C.	do.
Insitu Concrete to Footways	South Shields Corporation	S. E. Burgess, Borough Engineer, Chapter-row, South Shields	do.
Street Improvement Works	Andenshaw U.D.C.	W. Clough, Surveyor, 2, Guide-lane, Andenshaw	do.
Wesleyan Ch. and Schools, Linthorpe-rd., Middlesbro'	.....	W. J. Morley & Sons, Architects, 269, Swan-arcade, Bradford	do.
*Making-up and Paving Roads	Hammersmith Borough Council	Borough Surveyor, Town Hall, Hammersmith	do.
*Prov. & Fix. Elec. Light Fittings, etc., Gainsboro'-rd.	Hackney Union	Clerk's Offices, Sidney-road, Homerton, N.E.	do.
Elec. L. Fgs., Cas. Wds, etc., G'boro'-rd., H'kney Wick	Hackney Guardians	W. A. Finch, Architect, 76, Finsbury-pavement, E.C.	do.
Quarrying and Carting Road Materials	Linlithgow County Council	A. Forbes, County Road Office, Linlithgow	do.
Branch Library, Morningside-road	Edinburgh Corporation	R. Morham, City Arch., Public W'ks Office, City-ch., Edinburgh	do.
*Painting and Cleaning Hospitals	Metropolitan Asylums Board	Office of Board, Embankment, E.C.	do.
*Sanitary Annexes, Caterham Asylum	do.	do.	do.
Lighting of Public Lamps	Slough U.D.C.	G. H. Charsley, 11, Mackenzie-street, Slough	Mar. 10
Materials	Withington U.D.C.	A. H. Mountain, Engineer, Town Hall, Withington, Manchester	do.
Repairs and Painting at Workhouse	Newhaven Guardians	W. Gates, Clerk, 86, High-street, Lewes	do.
*Making-up Roads	Ealing Town Council	Borough Engineer, Town Hall, Ealing, W.	do.
Gas Cooking and Heating Stoves, etc.	Belfast Gas Committee	Manager, Gasworks, Ormeau-road, Belfast	do.
Stone Bridge, Llandowror	Carmarthen R.D.C.	The Rectory, Llandowror	Mar. 11
Road Material (Whinstone, etc.)	Flaxton R.D.C.	J. Peters, 4, New-street, York	do.
Slag	Kiveton Park R.D.C.	J. P. Evans, Sur., Council Offices, Kiveton Pk. Station, Sheffield	Mar. 12
Limestone and Granite Macadam, etc.	Burnley R.D.C.	S. Edmondson, Surveyor, 18, Nicholas-street, Burnley	do.
Supplies, Electricity Department	Wrexham Town Council	W. Sillery, Borough Electrical Engineer, Willow-road, Wrexham	do.
Filters at Gorbals Works, near Barrhead	Glasgow Corporation	J. R. Sutherland, Engineer, 45, John-street, Glasgow	do.
Pipework, etc., Electric Light Supply	Kilmarnock Corporation	W. Middlemass, Town Clerk, Kilmarnock	Mar. 14
Supplies	Eccles Corporation	T. S. Picton, C.E., Town Hall, Eccles	do.
Extension of Porter Warehouse, Belfast	G.N. Ry. Co. (Ireland)	W. H. Mills, Engineer, Amiens-street Terminus, Dublin	do.
Building for Parcels Post, Portadown	do.	do.	do.
Extension of Goods Store, Carrickmacross	do.	do.	do.
Coal Store, Enniskillen	do.	do.	do.
Station Building, Victoria Bridge	do.	do.	do.
C.I. Pavement and Road Box Frames and Covers, etc.	Edinburgh Corporation	Resident Engineer's Office, 5, Dewar-place, Edinburgh	do.
4,500 Yards Concrete Paving, High-st., Felixstowe	Felixstowe and Walton U.D.C.	F. B. Jennings, Clerk, Town Hall, Felixstowe	Mar. 15
Broken Slag	Blyth and Cuckney R.D.C.	F. Hopkinson, Surveyor, 40, Bridge-street, Worksop	do.
Alterations to Cookery Centres	Rotherham Education Committee	J. Platts, Architect, High-street, Rotherham	do.
Stores and Work	Belfast Works Committee	Superintendent of Works Office, Town Hall-street, Belfast	do.
*Enlargement of Sorting Office, Chippenham Station	Commissioners of H.M. Works, etc.	Postmaster, Chippenham	do.
Telephones and Fire Alarms	Gainsborough U.D.C.	R. W. Fraser, Electrical Engineer, Engineer's Office, Gainsborough	Mar. 16
*Making-up and Paving Road	Fulham Borough Council	Borough Surveyor, Town Hall, Fulham	do.
*Enlargement of Post Office, Lichfield	Commissioners of H.M. Works, etc.	J. Wager, H.M. Office of Works, Storey's-gate, S.W.	do.
*Baptist Chapel, Surbiton	.....	A. Mason, Broughton-chambers, Surbiton	Mar. 17
*New Sorting Office, Finsbury Park	Commissioners of H.M. Works, etc.	J. Wager, H.M. Office of Works, Storey's-gate, S.W.	do.
Supplies, Electricity Department	Wimbledon U.D.C.	Electric Light Works, Durnsford-road, Wimbledon	Mar. 18
Valves & Pipes for Storage Reservoir, Thorpe Malsor	Kettering U.D.C.	T. R. Smith, Engineer, Market-place, Kettering	do.
*New Coastguard Buildings, Sea View	Admiralty	Director of Works Department, 21, Northumberland-avenue, W.C.	do.
Fire Escape Staircases at Oulton Workhouse	Matford and Lothingland Guardians	R. Scott Cockrill, A.R.I.B.A., Crossley House, Lowestoft	Mar. 19
Sewerage Works, Hargarth Ings, Tadcaster	Tadcaster R.D.C.	Martin & Fenwick, Engineers, 1, Park-place, Leeds	do.
Waterworks, Portadown and Banbridge	Joint Waterworks Board	W. Wilson, Clerk, Town Hall, Portadown, Ireland	Mar. 21
Schools, Antrim	Select Vestry of Parish Church	W. J. Fennell, Architect, 2, Wellington-place, Belfast	do.
Subway, &c., Bolckow-rd., Grangetown, R.S.O., Yorks	Eston U.D.C.	C. McDermid, Surveyor, Council Offices, Grangetown	Mar. 22
Excavating, Drainage and Roads (Contract 2)	do.	do.	do.
Steel Girder Bridge	do.	do.	do.
Electricity Works Extension	Ilford U.D.C.	J. W. Fenton, Clerk, Town Hall, Ilford	do.
Brick Sewer, Borough-road	Birkenhead Corporation	C. Brownridge, Borough Engineer, Town Hall, Birkenhead	Mar. 23
*Additions to Asylum at Garlands	Cumberland, etc., Joint Asy. Com.	C. W. Allan Hodgson, The Courts, Carlisle	Mar. 26
Stone Bridge, etc., Powbeck, Dalston	Carlisle R.D.C.	J. Graham, Engineer, Bank-chambers, Bank-street, Carlisle	Mar. 31
Trans-Conti. Ry. on Land Grant System, S. Australia	Railways Commissioner, Adelaide	H. A. Grainger, Agent-General, Threadneedle House, E.C.	April 1
Pulling Down & Rebuilding Victoria Hotel, Carlisle	F. M. Laing	Oliver & Dodgshun, Architects, Carlisle	No date.
Excavating for Fourteen Houses, Park-avenue, Barry	.....	E. David & David, 27, High-street, Cardiff	do.
Welsh Baptist Ch. and Minister's House, Ynysboeth	.....	Ivor Jones & T. E. Richards, Archs., 18, St. Mary-street, Cardiff	do.
Ward, Astley Sanatorium	Leigh Joint Hospital Board	Travers & Ramsden, Architects, Leigh, Lancs.	do.
New Streets, Armley	Albion Allotments Society	T. Winn & Sons, Architects, 92, Albion-street, Leeds	do.
Elec. Lighting, Laundry Plant, etc., Omoa Poorhouse	.....	A. Cullen, F.R.I.B.A., Clyde-street, Motherwell, N.B.	do.
Primitive Methodist Chapel, Simms Cross, Widnes	.....	Moulds & Porritt, Architects, 77, King-street, Manchester	do.
Parcel Post Office, Waterloo-street, Glasgow	Com'rs. H.M. W'ks & Public Bldgs,	H.M. Office of Works, Edinburgh	do.
*Internal Painting of Chapel, Bayswater	.....	T. H. Ferryman, Surveyor, 33, Chancery-lane, W.C.	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*Assistant-Surveyor	Stroud U.D.C.	2*l.* per week	Mar. 2
*Clerk of Works	Bethnal Green Borough Council	3*l.* 10*s.* per week	Mar. 7
*Furniture Superintendent	School Board for London	200*l.*	do.
*Clerk of Works and Farm Bailiff	Croydon Borough Council	130*l.*, etc.	Mar. 10

Those marked with an asterisk (*) are advertised in this Number. *Competitions*, iv. *Contracts*, iv. vi. viii. x. xii. *Public Appointments* xix.

TENDERS—*Continued from page 237.*

LONDON.—For roads and sewers on Section B, White Hart-lane estate, Wood Green, for the London County Council:—

Martin, Wells, & Co., Ltd.	£8,327 0 0
A. B. Champness	8,294 12 11
Wm. Griffiths & Co., Ltd.	7,753 11 5
Joshua Macklin	7,616 12 2
Thomas Adams	7,386 14 4
J. & E. Bloomfield	6,955 0 0
Grounds & Newton	6,836 15 4
R. Ballard, Ltd.	6,657 0 0
F. J. Coxhead, 45, Bulwer-road, Leytonstone*	6,484 0 0

[The architect's estimate comparable with these tenders amounts to £7,370.]

LONDON.—For the reconstruction, for electrical traction, of the Streatham cable tramways, and construction of authorised tramways at Tooting, for the London County Council:—

George Law	£128,587 11 3‡
William Kennedy	113,806 12 11
John Mowlem & Co., Ltd.	111,710 0 0
Pethick Bros.	110,142 16 8
R. W. Blackwell & Co., Ltd.	104,604 10 6
William Underwood & Bro.	99,221 0 0
Edmund Nuttall & Co.	97,132 13 1
Dick, Kerr, & Co., Ltd.	95,751 7 9
J. G. White & Co., Ltd.	95,005 7 4
W. Griffiths & Co., Ltd., London†	86,623 19 11‡

‡ Recommended for acceptance.

LONDON. — For fuel economisers, Greenwich electricity generating station, for the London County Council:—

Goodbrand & Co.	£3,164 13 11
Clay Cross Co.	3,150 15 6
E. Green & Son, Ltd., Wakefield*	3,071 6 0
Arthur Lowcock, Ltd.	3,060 8 0
James Carter & Sons†	2,518 8 6

† Not to specification.

LONG SUTTON (Lincs.).—For supply of granite, slag, etc., for the Urban District Council. Mr. A. A. Piccaver, Surveyor, Long Sutton:—

	700 tons. Price of XX.	200 tons. Slag 1¾in.	Steam Rolling. 350 tons. Price of X.	Steam Rolling. 200 tons. Slag 2¼in.
	s. d.	s. d.	s. d.	s. d.
A. Brunton & Son	11 4	—	10 7	—
	—	—	9 6‡	—
Croft Granite, etc., Co., Ltd.	10 7	—	11 0	—
Cliff Hill Granite Co., Ltd.	11 0	—	11 0	—
Enderby & Stoney Stanton Granite Co., Ltd.	11 0	—	10 9	—
Forest Rock Granite Co., Ltd.	11 0	—	10 8	—
Groby Granite Co., Ltd., Groby, near Leicester	10 8*	—	10 4*	—
W. Grimley & Co., Sutton Bridge, Lincs.	10 7	7 10*	10 4	7 10*
Islip Iron Co., Ltd.	—	7 4§	—	7 5§
Kaltenbach & Schmitz	12 6	—	12 3	—
London Basalt Stone Co., Ltd.	12 3	—	12 3	—
William Prestwich	—	7 6	—	7 8
J. F. Shackleton & Son	11 8	—	11 8	—
Whitwick Granite Co., Ltd.	10 11 best qual.		10 11	—
	9 5	—	9 5	—

† Scotch delivered on quay at Sutton Bridge.
§ 1¼in. ‖ 2in. to 2¼in.

MITCHAM.—For 400 tons of Guernsey granite spalls at Workhouse, Western-road, Mitcham, for the Guardians of Holborn Union:—

Guernsey Spalls.

	per ton. s. d.		per ton. s. d.
W. Griffiths & Co., Ltd.	11 9	A. & F. Manuelle	10 7
J. Mowlem & Co., Ltd.	11 5	John Hall	10 6
L. Sommerfeld	10 8	Fry Bros., Lion Wharf, Greenwich*	9 11

Jersey Spalls.

Ronez Granite Quarries, Ltd.	9 5

NORTH SHIELDS.—For alterations and additions to new board room and offices in Northumberland-square, for the Tynemouth Guardians. Mr. H. Gibson, architect, Wellington-chambers, North Shields. Quantities by architect:—

J. D. Greenwell, Whitley Bay*	£598 10 0

SHEFFIELD.—For heating apparatus, Hammerton-street Council School, for the Education Committee:—

C. Pearce & Son, Sheffield*	£450 0 0

SLAITHWAITE (Yorks.).—For the erection of a residence in Nields-road, for Mr. Joe Pogson, of Marsden. Messrs. Lunn & Kaye, architects, Milnsbridge, Yorks.:—

Masons: Eli England & Sons, Slaithwaite	£373 0 0
Joiner: Jas. Schofield, Marsden	226 0 0
Plumber: Thos. Firth, Marsden	90 10 0
Tilers: Pickles Bros., Huddersfield	70 0 0
Concreters, Plasterers, and Decorators: J. & J. Bottomley, Marsden	153 10 0
Heating Engineers: Brook, Hardcastle, & Watson, Huddersfield	61 0 0

TOTTENHAM.—For making-up North-grove (remainder), for the Tottenham Urban District Council. Mr. W. H. Prescott, Engineer to the Council, 712, High-road, Tottenham. Quantities by Messrs. Campbell & Son:—

E. T. Bloomfield	£409 13 4	C. Bloomfield, Tottenham*	£376 15 10
Grounds & Newton	376 19 10	A. T. Catley	375 17 6

WHITLEY BAY.—For the construction of underground conveniences at the Promenade, for the Whitley and Monkseaton Urban District Council. Mr. J. P. Spencer, architect and surveyor, 30, Howard-street, N. Shields:—

J. & R. Johnson	£1,603 7 2	J. L. Miller	£1,209 0 0
J. Dobinson	1,420 0 0	Nesbit & Son	1,155 10 0
J. Douglass	1,367 14 3	W. Dykes	1,151 0 0
J. B. Harris	1,343 16 0	J. & W. Simpson	1,125 0 0
W. Beautyman	1,326 17 11	N. Ritchie	1,091 0 0
W. A. Styan	1,304 3 4	T. Patterson, Whitley Bay*	1,060 0 0
W. C. Tyrie	1,234 4 6		
Thornton & Co.	1,269 6 0		

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